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ALPHABETICAL LIST

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THE

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MEDICAL JOURNAL.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Report on the Causes of Death among the Assured of the Scottish Widows' Fund Life Assurance Society, for the period from 1st January 1853 to 1st January 1860.* By JAMES BEGBIE, M.D., F.R.S.E., Physician in Ordinary to the Queen in Scotland, etc.

I OFFER no apology for appearing once more, at the end of seven years, with an account of the deaths that have occurred during the interval among the assured of the Scottish Widows' Fund Society. The investigation, which by its constitution takes place septennially, into the affairs of the Society, affords a suitable opportunity of exercising a scrutiny into the emerged risks by reason of death, that have occurred during the period; and the favourable manner in which two former contributions to this branch of medical knowledge have been received, both by the profession and by those engaged in more purely statistical pursuits, encourages me to hope that the present, as furnishing the results of greater numbers and larger experience, will not prove unacceptable.

It is still matter of regret that, among the numerous institutions for the assurance of life, the Standard Company alone has followed the example of the Scottish Widows' Fund Society in the publication periodically of its records of mortality. The reports furnished by Dr Christison, and the value attached to them, ought to have stimulated others to follow in the same path before this time. These reports confirm and establish the principles, and the lessons which are deducible from the published experience of the Scottish Widows' Society. If in any respect they are found to differ, I believe the discrepancy will be found to arise mainly from the greater age and nearer approach to maturity which the Society has now attained, and by which a fair average number of risks of all ages has at length been reached.

The septennial period recently completed has added 975 to the list of Emerged Risks on the books of the Society, and raised the deaths from 1332, the number declared at the former investigation, to 2307,—the gross mortality from the commencement of the Institution in 1815 to the close of the year 1859, a period of forty-five years.

These 975 deaths have occurred among 8955 persons exposed to the risk of mortality.[1]

It becomes my duty to lay before you on this occasion some account of these 975 deaths; and, in doing so, I shall arrange my observations in the same order, and with a view to similar objects as were presented to you in two former reports.

The following Table shows the number of deaths from the different causes, according to the arrangement of the Registrar-General, and the difference in each class between the present and former investigation :—

	Period.		Period.	
	1846–52.	1853–9.	1846–52.	1853–9.
I. *Epidemic and Contagious Diseases.*				
1. Small-pox, ...	0	4		
2. Scarlatina, ...	1	5		
3. Diarrhœa, ...	3	7		
4. Dysentery, ...	16	10		
5. Cholera (Malignant), . .	27	17		
6. Influenza, ...	8	6		
7. Fever (Remittent), . .	2	0		
8. Fever (Continued), . .	63	48		
9. Erysipelas, ...	10	9		
10. Hydrophobia, . . .	0	1		
			130	107
II. *Diseases of Uncertain Seat.*				
1. Inflammation, . . .	0	2		
2. Hæmorrhage, . . .	1	0		
3. Dropsy, ...	4	4		
4. Abscess, ...	0	3		
5. Mortification, . . .	4	6		
6. Scrofula, ...	0	1		
7. Cancer, ...	5	28		
8. Tumour, ...	7	3		
9. Gout, ...	1	4		
10. Atrophy, ...	4	3		
11. Debility, ...	7	0		
12. Sudden Death, . . .	7	5		
			40	59
Carry forward, . .	.	.	170	166

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[1] The average age of these persons at 31st December 1859 was 51 years, being an increase of 2½ years on the age as at the period ending 31st December 1852.

	PERIOD.		PERIOD.	
	1846–52.	1853–9.	1846–52.	1853–9.
Brought forward,	.	.	170	166
III. *Diseases of the Brain and Nerves.*				
1. Cephalitis,	6	9		
2. Apoplexy,	54	67		
3. Paralysis,	28	79		
4. Tetanus,	1	1		
5. Epilepsy,	4	2		
6. Insanity,	0	3		
7. Delirium Tremens,	7	7		
8. Disease of Brain,	50	66		
			150	234
IV. *Diseases of the Respiratory Organs.*				
1. Laryngitis,	1	4		
2. Bronchitis,	36	44		
3. Pleurisy,	7	7		
4. Pneumonia,	15	42		
5. Hydrothorax,	7	7		
6. Asthma,	0	1		
7. Consumption,	42	66		
8. Disease of Lungs,	21	25		
			129	196
V. *Diseases of Heart and Blood-vessels.*				
1. Aneurism,	11	11		
2. Pericarditis,	0	2		
3. Disease of Heart,	55	122		
			66	135
VI. *Diseases of the Digestive Organs.*				
1. Enteritis,	6	9		
2. Peritonitis,	2	8		
3. Ulceration of Bowels,	3	3		
4. Hernia,	2	0		
5. Ileus,	4	5		
6. Hæmatemesis,	1	7		
7. Disease of Stomach and Bowels,	34	31		
8. Hepatitis,	5	2		
9. Jaundice,	3	1		
10. Disease of Liver,	34	49		
			94	115
VII. *Diseases of the Urinary Organs.*				
1. Ischuria,	1	2		
2. Diabetes,	1	4		
3. Cystitis,	7	2		
4. Stone,	1	0		
5. Disease of Kidney,	15	39		
6. Disease of Bladder,	5	5		
			30	52
VIII. *Childbed, and Disease of Uterus.*				
1. Childbirth,	2	1		
2. Ovarian Disease,	0	1		
3. Disease of Uterus,	3	0		
			5	2
Carry forward,	.	.	644	900

	Period.		Period.	
	1846–52.	1853–9.	1846–52.	1853–9.
Brought forward, . .	.	.	644	900
IX. *Diseases of Joints.*				
1. Rheumatism, ...	3	7		
2. Disease of Joints, . . .	1	5		
3. Disease of Spine, . . .	0	2		
			4	14
X. *Diseases of Integumentary System.*				
1. Carbuncle, ...	2	0		
			2	0
XI. *Violent Death.*				
1. Suicide, ...	6	6		
2. Drowning, ...	6	4		
3. Accidental Injury, . .	6	19		
			18	29
XII. *Natural Decay and Old Age*, . .	21	29		
			21	29
Causes not specified or ascertainable,	1	3		
			1	3
Total, . . .	.	.	690	975

The deaths from all causes combined, during the last seven years, have thus greatly exceeded those of the previous seven years of the Society's experience; but proportionally in a smaller ratio than might have been expected from the constant increase of membership, and the mature age the Society has now attained.

I. In regard to the class of Epidemic and Contagious diseases, it will be remarked, that, in point of numbers, there has been a considerable diminution in almost all the causes of death which constitute the class—namely, from 130 in the former investigation, to 107 in the present; that is, from 18¾ per cent. to 11 per cent. of the total mortality. Small-pox, diarrhœa, and scarlatina, form, however, exceptions,—the former, for the first time since the institution of the Society, taking its place on our mortality tables, and numbering four victims; the latter accounting for five deaths in our present scrutiny, in place of one in the former; while diarrhœa rises from three in the former to seven in the last investigation.

The last three years have proved a season of high mortality from small-pox; and this experience has naturally led to the enforcement of the provisions for vaccination under existing Acts of Parliament. It becomes the duty of all medical men connected with life associations to ascertain that all applicants for assurance have enjoyed the means of protection or immunity afforded by Jenner's discovery, from one of the greatest scourges to which mankind is exposed. Our records show that four men in the prime of life, each pursuing a healthy occupation in different parts of the country, have fallen victims to its severity during the last septennium. The case of one deserves the additional note, that he effected his assurance in the month of November, and died in the following month, after an illness of fourteen days.

The diminution of mortality in the class of epidemic and contagious diseases is chiefly owing to the cessation of malignant cholera as an epidemic, and the restricted prevalence of continued fever. Cholera has, however, been the cause of 13 deaths during the year 1854, and of four more during the last five years, 1855-59; that is, $1\frac{3}{4}$ per cent. of the total mortality. It was in the West of Scotland that the chief mortality during the summer and autumn of 1854 occurred. Four deaths took place in Glasgow, one in Greenock, one in Millport, one in Ayr, and one in Girvan. No death occurred in Edinburgh, and only one in Leith. Two deaths took place in England, and two in Ireland. The remaining four are reported from the colonies, or as having happened at sea. It is remarkable that, of the 17 who fell victims to the disease, seven were engaged as merchants; the remaining deaths being diffused throughout eight professions or occupations; while two were furnished by females. One death only occurred before 40 years of age, six between 40 and 50, seven between 50 and 60, two between 60 and 70, and one between 70 and 80. One member had survived the date of his insurance 30 years; another, 22; another, 19; another, 18; two others, 15; another, 14; and another, 10. Six had lived from 2 to 10 years after effecting insurance; and three became claims within a few months after the date of their policies. The average expectation, according to the Carlisle Tables, of these 17 was 27·05 years; their average endurance was only 10·46.[1] Eight of the 17 fell under the terrible disease within 24 hours of seizure; five more in the course of a week; information upon this point in regard to the remainder is wanting, from the circumstance of death happening abroad, or during a long sea voyage.

Fever, one of the most serious sources of loss in the business of life assurance, exhibits a greatly diminished rate of mortality as compared with the former septennial investigation,—namely, 48, in place of 63, deaths; that is, 5 per cent., instead of 9 per cent., of the total mortality among the assured.

In two former reports I entered fully into such statistical data as the records of the Society afford in regard to age, profession, residence, etc., as influencing the mortality of fever. At present I shall only state, that, of the 48 deaths, five took place between 20 and 30, thirteen between 30 and 40, four only between 40 and 50, fourteen between 50 and 60, eleven between 60 and 70, and one between 70 and 80. Comparatively few risks emerged during the earlier years of insurance. One survived the date of his policy 30 years; two survived that period 28 years; two, 26 years; one, 23; one, 22; three, 21; and two, 20 years each. Eleven risks emerged between the 20th and the 10th years of insurance; eleven more between the 10th and 5th years; and fifteen between the 5th and 1st year of entrance. The average expectation of these 48 insurers was 29·55 years; their average endurance was 11·82.

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[1] I have much pleasure in acknowledging the able assistance I have received on this, as well as on former occasions, from Mr James Wilson, lately of this Society, now Secretary at Glasgow, to the English and Scottish Law Life Assurance Association, and particularly for the calculations furnished as to expectation and survivancy.

The professions or occupations most liable to risk from fever cannot be inferred from the data before us; but we notice that the deaths extend over 28 trades or professions: 20 furnish one each; bankers, merchants, schoolmasters, and advocates, furnish two each; writing clerks, writers, military officers, and medical men, three each; while the clergy furnish four, and the female sex five, to complete the list.

It is remarkable that the deaths from fever are distributed in single cases over eight towns in Scotland, five in England, and three in Ireland, and in single cases, also, in four districts in Scotland, in three of our colonies, in three foreign countries, or at sea; that Glasgow, Northampton, Belfast, and Cork furnish two each, while London furnishes three, and Edinburgh so high a rate as nine deaths.

Protection from fever, to a great extent at least, is believed to be derived from a previous attack of the disease. Our records show, that in three instances, in the present investigation, death occurred where the parties had been so protected. In only one instance could hereditary predisposition to fever be inferred. It occurred in the case of a medical man, whose father had been cut off at the same period of life, during an epidemic.

The deaths from erysipelas have been considerably reduced in proportion to the general mortality, and the loss to the Society comparatively small, in consequence of the emerged risks under this head being chiefly in the case of men who had attained advanced ages, and several of whom had exceeded their expectation of life. Thus, of the nine deaths, only one occurred before 40; two between 50 and 60; one between 60 and 70; three between 70 and 80, two of them verging on the octogenarian period; and one between that and 90. One survived his acceptance 2 years; one, 7 years; another, 14 years; and three others, 19 years each. One survived the period 23 years; one, 27 years; and one the long term of 41 years.

II. In the class of Diseases of Uncertain Seat, there is a slight increase,—the number of deaths from these causes being 59 on this occasion, and 40 at the former septennial period, that is, from $5\frac{3}{4}$ to to 6 per cent. of the total mortality. This increase arises mainly from one source, namely, cancer, under which there are 28 deaths against 5 in our former table. It is gratifying to find that, in consequence of the greater attention to accuracy in the returns, debility has no place in our present investigation, and that dropsy only figures as the cause of 4 deaths. The causes which have led to the large addition to the mortality from cancer, no doubt, originate in the same improvement in the certificates of death; but they can be traced also to the circumstance that the advanced age of the Society has brought forward an increasing number of risks to the age at which malignant disease more commonly developes itself. Of the 28 victims of cancer who have fallen during the present investigation, ten effected assurance before 40 years of age; nine between 40 and 50; seven between 50 and 60; one between 60 and 70; and one after 70 years of age. Of these, one only died before 40; four between 40 and 50; five between 50 and 60; fifteen between 60 and 70; two between 70 and 80; and one—she who assured at 71—fell at the ripe age of 85. The average expectation of these parties was 25·14; their average endurance was 15·41 years. These emerged risks embrace nineteen males and nine females, and are distributed over sixteen professions or occupations, two of them only having a double number. In seven females the disease affected the breast; in one, its seat was in the liver; and in another, in the rectum. In one male it manifested itself in the breast; in three, in the abdomen; in three, in the gullet; in three, in the rectum; in two, in the tongue; in two, in the stomach; in two, in the groin; in one, in the kidney; and in one, in the lungs. In one only its seat has not been ascertained.

There cannot be a doubt that, under the name of disease of the stomach and bowels, and of the liver, lungs, and other internal organs, many certificates of death have been returned, for which cancer or other malignant disease could more appropriately have been substituted as the fatal cause.

Under the name of inflammation two deaths are returned. One occurred in a gentleman aged 66, who was predisposed to gout; the other in a gentleman of 42, also predisposed to gout. In both the leg was the part affected. In the latter, pyæmia was the immediate cause of death. The cases of mortification occurred in persons advanced in life. The disease, in five cases out of six, affected the foot and leg in the form of senile gangrene. Gout has been immediately fatal in four instances,—affecting the heart, and subsequently the brain, and terminating in coma. The parties, in three of these gout risks, were known to inherit the predisposition to their fatal disease. Three of the parties returned as the subjects of sudden death were found dead in bed, one after severe vomiting. Another died while bathing. Of the fifth no information is afforded, save that he was found dead, having suffered severely from rheumatism previous to assurance, and that his father had gout.

III. In the class of Diseases of the Brain and Nervous System, there is a considerable increase of deaths. In the former investigation this class of diseases accounted for 150 deaths, or 21¾ per cent. of the total mortality; in the present it accounts for 234, or 23¾ per cent. of that mortality. The increase arises from one disease alone, namely, paralysis, which has risen in fatality from 28, or 4 per cent., to 79, or 8 per cent. of the total deaths among the assured. Apoplexy, which yielded 8 per cent. on the former, is reduced to 6¾ per cent. in the present scrutiny; and chronic diseases of the brain, which were fatal in the proportion of 7¼, occasion only 6¾ per cent. of the mortality of the last seven years. Though the diseases of this class bear a higher per centage of death than any other, it is satisfactory to find that the claims on the Society have not arisen from recent insurances, that a large proportion of the policy-holders had outlived their expectation term, and that the average survivancy is much beyond what might have been anticipated. Thus, of 66 emerged risks, under disease of the brain, each survived, on an average, more than a half of his expectation of life,—that is, 15·08 years on an average, in place of 28·16. Of 67 persons who died of apoplexy, the survivancy was still higher, that is, 15·54 years in place of 24·92; and of 79 victims of palsy, each survived more than two-thirds of his expectation term, that is, 17·46 years on an average, instead of 23·77.

Dr Christison records the experience of the Standard Company in reference to the survivancy of the emerged risks under this clsss of diseases—that is, apoplexy, palsy, and chronic disease of the brain, as considerably short of these calculations. Thus, of 65 cases composing the class, each survived nearly one-half the natural term, that is, 11·6 years on an average, instead of 22·5. In future reports there is reason to expect, from advancing years, a nearer approach to the experience of the Scottish Widows' Fund.

Of the 67 deaths from apoplexy, one occurred before 30 years of age; four between 30 and 40; nine between 40 and 50; twenty-one between 50 and 60; seventeen between 60 and 70; twelve between 70 and 80; and three beyond 80 years of age. Eight only of the 66 had effected insurance after attaining 60. Of the 79 deaths from palsy, one occurred before 30; two between 30 and 40; seven between 40 and 50; nineteen between 50 and 60; twenty-four between 60 and 70; twenty-four between 70 and 80; and two about 80 years of age.

Of these 146 victims of apoplexy and palsy there were representatives of 47 professions or occupations, the larger proportion furnishing only 1 death each. The learned professions are more largely represented; there being 2 University professors, 2 judges, 2 advocates, 2 schoolmasters, 2 surgeons, 6 writers, and 12 clergymen. The commercial interest is represented by 4 bankers, 5 manufacturers, and 14 merchants; the agricultural, by 2 gardeners and 4 farmers; the army, by 2 sergeants, 1 captain of engineers, and 1 colonel; the navy, by 2 mariners and 1 hospital governor; the nobility and landed interest, by 4 noblemen and 8 landed proprietors; while 19 of the emerged risks happened in the case of females.

Of the deaths from chronic disease of the brain, one occurred before 30 years of age; nine between 30 and 40; seventeen between 40 and 50; twelve between 50 and 60; sixteen between 60 and 70; ten between 70 and 80; and one above 80 years of age. These 66 deaths are diffused throughout 33 occupations or professions; 21 of which furnish only one death each; 4 furnish two each; bankers, solicitors, and private gentlemen, three each; writers, four; medical men and clergymen, five each; and merchants twelve; while two are added by the female sex.

It is satisfactory to find a greatly diminished mortality under the head of delirium tremens; but painful to find that of the seven emerged risks the youngest was 32, and the eldest only 56 years of age. The seven occupations followed by these parties were—baker, grocer, brewer, chemist, publican, spirit-dealer, and commercial traveller.

Diseases of the brain and nervous system, and of the digestive organs, have been considered peculiarly those of the intemperate classes; Mr Neison, the able actuary, having found that, in a population of intemperate livers, beyond the age of 20, 50 per cent. die of these diseases, while in the general population over England and Wales, the average deaths from these causes, at the same ages, is only 16 per cent. The same writer having farther on an analysis of the tables of the Scottish Widows' Fund Society, and of the Standard Company, found that, in the latter, the percentage of deaths from these causes is 30, and in the former 34, ventures to suggest, that an inspection of these results immediately throws suspicion on the habits of the lives assured in the Standard Life Office and the Scottish Widows' Fund, but particularly the latter, the observations of which extend over a period of 38 years.[1] I apprehend that, as our observations continue to extend, and our success in the selection of lives progressively increases, these Institutions must retain the suspicious character Mr Neison has somewhat incautiously assigned to them, if that character is made to depend in any measure on the number of their members who die from diseases of the nervous system. For a reference to their mortality tables will show, that the chief sources of death in this class,—namely, apoplexy, palsy, and chronic disease of the brain, are peculiarly the diseases of advanced life,—that they begin to be common at 50, and from that age to the latest term of life they increase in increasing ratio, while the numbers living actually diminish. In this is to be found one explanation of the large percentage of deaths from the causes referred to; and I need scarcely point out another element in the opposite scale, which deranges the calculations in such an examination as

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[1] See *Contributions to Vital Statistics*, page 221.

Mr Neison has undertaken,—namely, the fact that life associations, of necessity, present a low percentage of death from all the diseases incident to younger ages, partly from the circumstance that comparatively few seek the advantages of assurance before the age of 25 or 30; and chiefly, because the benefits of selection are most conspicuous in the early ages of assurance, when, by careful examination, those predisposed to, or affected with, tubercular disease are excluded from membership. In this way there is a greatly diminished rate of death from consumption alone, our tables giving a percentage of 6¾ in place of 20—the rate of death over England and Wales. Such circumstances explain the diminished mortality in the earlier ages, and the great preponderance of deaths from causes which come into operation at the more advanced periods of life. I shall have occasion to return to the subject of intemperate lives. Meantime, I may be allowed to notice, that all the deaths from diseases of the nervous system, during the last seven years of the Society's experience, occurred before 60 years of age, in the case of every disease constituting the class, with the exception of apoplexy, palsy, and chronic disease of the brain; and that in these affections the fatal event occurred in 103 instances before the age of 60, and in 109 after that period of life. In marked contrast to this experience, is that of Mr Neison in regard to his intemperate lives. Of 97, the number who died of head diseases, 57 died of delirium tremens; and of the whole 97, only 8 survived the age of 60.

The following table exhibits the mortality from apoplexy, palsy, and chronic disease of the brain, compared with that from all other causes, at six decennial periods, and the percentage of death at the successive ages:—

Age at Death.	From all Causes.	From Apoplexy, Palsy, and Disease of Brain.	Ratio per Cent.
Between 20 and 30,	33	3	9·09
... 30 ,, 40,	106	16	15·09
... 40 ,, 50,	167	36	21·55
... 50 ,, 60,	245	52	21·23
... 60 ,, 70,	242	57	23·55
Above 70,	182	52	28·57
Total, . . .	975	216	22·15

IV. Among the Diseases of the Respiratory Organs, there is, during the last septennial period, a slight increase of mortality. During the former period, 129 deaths, or 18¾ per cent. of the total mortality, were reported under this head, showing a decided decrease as compared with the gross mortality from the commencement of the Society up to that period, which had been found to be so high as 23¾ per cent. On the present occasion, 195 deaths, or 20 per cent. of the total mortality, are returned under this class; and it is satisfactory to find, that consumption, the most fatal cause among diseases of the respiratory organs, still maintains a greatly diminished rate of mortality. In the first investigation into the causes of death, consumption accounted for 72 out of 642 deaths, or nearly 11 per cent. of the gross mortality; in the last investigation it accounted for 42 out of 690 deaths, or 6 per cent. of the mortality; and, in the present scrutiny, we find 66 out of 975 deaths, or 6¾ per cent. accounted for from this cause. This is a low percentage compared with the mortality from this cause over England and Wales, which the Registrar-General has shown to be so high as 20 per cent., and small in proportion to the mortality exhibited among other associations, for Dr Christison, in his last Report on the deaths of the Standard Company, has shown that 60 out of 424 deaths, or upwards of 14 per cent. of the whole mortality, had arisen from consumption.

The care which has been exercised during a long series of years, in excluding from the benefits of the Society those of early age in whose immediate family the taint of consumption had manifested itself, has, no doubt, led to these results; but they are also due in some measure to the mature age of the Institution, which has brought into the field a large and increasing proportion of risks who have passed the period at which the disease is most prevalent.

Of these 66 deaths from consumption, nine occurred between 20 and 30 years of age; sixteen between 30 and 40; twenty-two between 40 and 50; sixteen between 50 and 60; and three only after the sixtieth year. No great improvement can be expected in the average survivancy of our consumptive risks, except by a rigid attention to family history, and careful examination, especially of the younger applicants for assurance. Of the 66 victims of the disease who fell during the present investigation, the average survivancy was only 8·62 years, in place of 31·28 years, according to the Carlisle Tables—a little more than a fourth of their expectation, —a proportion considerably higher, however, than that attained by the same class of risks in the Standard Company, Dr Christison having found that 60 assured persons survived, each on an average, 5·7 instead of 32·6 years, a mere trifle more than a sixth of their natural term of life.

Two of the consumptive risks of the Society emerged within the first year after acceptance; five during the second year; six during the third year; three during the fourth; seven during the fifth; six during the sixth; four during the seventh; four during the eighth; two during the ninth; and one during the tenth year of insurance. Fifteen deaths occurred between the tenth and fifteenth year after acceptance; eight between the fifteenth and twentieth; and two between the twentieth and thirtieth years.

Of the 66 risks, eight were females, and the deaths of the other six were diffused over thirty professions or occupations; 20 furnish one each; landed proprietors, military men, druggists, clergymen, bankers, innkeepers, grocers, and carpenters, furnish each two; merchants and surgeons, each three; drapers four, and writers and writers' clerks five each.

In two former reports I have entered fully into the subject of the hereditary transmission of consumption, and its bearing on the business of life assurance, with reference to the regulation to which I have alluded for avoiding consumptive risks—namely, that of excluding as ineligible all in whose immediate family more than one instance of the disease has manifested itself. This rule, which has guided the practice of the Society for the last twenty-five years, has been considered by some as too exclusive, and as tending to circumscribe too much the operations of life assurance; but the experience of the Society amply justifies its continued application, with certain exceptions, hitherto acted upon, such as arise from the age, sex, and constitution of the proposer—the number of his family—the proportion of those who have been affected with the disease, and the period he may have survived the age which proved fatal to his relatives. This rule for avoiding consumptive risks—the most serious by far in life assurance transactions—has been ably defended by Dr Christison, in his last Report on the deaths in the Standard Company, and illustrated by his experience of its operation. To these reports I must refer all who take an interest in the subject.

Of the 24 consumptive risks which emerged within five years after acceptance by the Society, 16 were free from any suspicion of hereditary taint, and were personally unobjectionable at the date of assurance. In regard to the remaining 8, though no personal objection applied, a suspicion attached to six of the number in consequence of one member of their immediate family having died of consumption; and to the remaining two, in consequence of two or more collateral relatives having suffered from the disease.

Of the 19 risks which emerged after the parties had attained the age of 50, seven had suspicion attached to them, at the time of effecting assurance, from the circumstance of one or more of their immediate family having been carried off by consumption. The remainder were free of any ascertained taint. Three of the 19 died at the age of 50; two at the age of 51; three at the age of 52; two at 54; one at 55; two at 56; two at 58; one at 59; one at 63; and two at 67 years of age.

Of 10 consumptive risks accepted after passing the 45th year of age, one died at 50; one at 51; one at 52; one at 56; two at 58; one at 59; one at 63; and two at 67. Four of the 10 were known to inherit a predisposition to their fatal disease at the time of acceptance, though personally eligible for assurance; to the remaining six no personal or family objection applied, so far as could be ascertained.

It is somewhat startling, and certainly instructive, to find that out of 66 deaths from consumption, 19 occurred after the age of 50; and not less so, that of the number, 10 took place in parties who had effected assurance after the age of 45.

Of the 66, not one reached his expectation term.

The following table exhibits the mortality from consumption, compared with that from all other causes, at six decennial periods, and the percentage of death at the successive ages:—

Age at Death.	From all Causes.	From Consumption.	Ratio per Cent.
Between 20 and 30,	33	9	27·27
... 30 ,, 40,	106	16	15·09
... 40 ,, 50,	167	22	13·17
... 50 ,, 60,	245	16	6·53
... 60 ,, 70,	242	3	1·24
Above 70,	182	0	0·00
Total, . . .	975	66	6·77

A considerable increase of deaths from diseases of the respiratory organs has been acknowledged during the last septennial period. The source of it has proved unexpected. During the first thirty-eight years of the Society's experience, the deaths from pneumonia were only 25 in number, or 1⅘ per cent. of the total mortality; but during the seven years which have just elapsed, the deaths from this cause amount to 42, or 4¼ per cent. of the general mortality, and only ¼ per cent. short of that of bronchitis, from which, for many years past, the rate of death has been very high. The deaths from pneumonia were distributed over all ages, from the earliest period of assurance to the threescore years and ten; fourteen only, however, occurred before the age of 50; and twenty-eight after that period of life, a larger number having died between 60 and 70 than during any other decennial period. The average expectation of the parties was 25·80 years; the average endurance was 12·72 years,—a survivance much beyond that of the consumptive risks. The deaths were distributed over twenty-two professions or occupations. Sixteen furnish one each; agents, writers, and writers' clerks, furnish each two; clergymen, three; gentlemen and landed proprietors, five; merchants, nine; while three were furnished by females.[1]

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[1] In the course of the conversation that followed the reading of this Report before the Medico-Chirurgical Society, it was suggested by a speaker, as a means of accounting for the large increase of mortality from pneumonia, that many cases of consumption might have been returned under the former name. The generally acknowledged prevalence of pneumonia of late years,—the character and reputation of those who are called upon to return the certificates of the causes of death,—and the pains that are known to be taken by the medical officers of Life Assurance Associations, in order to secure, as far as possible, accuracy in these returns, ought to have saved the remark. The age, moreover,

Besides these 42 deaths from inflammation of the lungs, there were seven from pleurisy—a disease which, in numerous instances, was concurrent with it—and 25 from chronic affections of the lungs, not of tubercular origin. Of this class of emerged risks several had exceeded their expectation term. The average survivancy of the class was 13·51 years; the average expectation was 27·44 years. It has been said, in regard to pleurisy, that physicians know little of the constitutional and other circumstances which predispose it. To this statement I must take exception. I concur with Hasse, that rheumatism is unquestionably the most ordinary source of pleurisy. In a large proportion of cases, pleurisy will be found to be intimately connected with the rheumatic diathesis; in fact, to appear as a rheumatic affection. In many cases it will be found to be intimately associated with the tubercular constitution, preceding, accompanying, and often terminating tubercular consumption; and in many cases we recognise it as a concurrent affection with renal disease and other blood-impoverishing disorders. Its ascertained existence, at any former time, in the person of a candidate for life assurance, is therefore always to be viewed with suspicion, and careful inquiry instituted in regard to personal and family predisposition. The same remark applies to pneumonia, a scrutiny of the deaths from these diseases during the last seven years disclosing numerous instances of the intimate connection existing between pleurisy and pneumonia, and the rheumatic and tubercular constitutions. The intimate connection of pleurisy with consumption was long since demonstrated by Louis, who informs us, that in 112 cases which he himself examined of persons dead of consumption, there was but one in which both lungs were free from adhesions.

Bronchitis furnished 44 deaths to the general mortality, or 4½ per cent. Of these, 14 only occurred before 60 years of age, and 30 after that period of life. A considerable number of these had passed their expectation term; and the loss to the Society from this cause is comparatively light. The average expectation of this class of emerged risks was 24·76 years; the average survivancy was 19·37 years.

V. Under the head of Diseases of the Heart and Blood-vessels,

at which death occurred in so large a proportion of these cases of pneumonia—namely, 28 out of 42 after 50 years of age—might have disarmed the suspicion of inaccuracy; and the fact which I now communicate nearly demonstrates its utter groundlessness: I mean, that, of the remaining 14 risks under the age of 50, the termination of the fatal illness was, in one instance, within the first week; in eight instances, within the second week; in one, within the fourth week; and in one, within the sixth week, after seizure; and that, in one of the still remaining three, a *post-mortem* examination revealed the fatal pleuro-pneumonia; leaving two deaths, certified by intelligent medical men, to the slender suspicion of being "*shifted*" from the column of consumption to swell the numbers under that of inflammation of the lungs.

there has been a large increase of deaths during the last septennial period. In the first report presented to the Society, the deaths were 53 in number, or 8¼ per cent. of the total mortality; in the second report they amounted to 66, or 9½ per cent.; but in the present investigation they reach the somewhat alarming number of 135,—that is, 13¾ per cent. of the total mortality. This at first sight may appear discouraging, but is satisfactorily accounted for. Chronic disease of the heart, which accounts for 122 of the 135 deaths, or 12½ per cent. of the general mortality, is, perhaps more than any other, the disease of old age; and hence we find, on a reference to our tables, that of these 122 deaths twenty-two only occurred before the age of 50, thus leaving 100 to be distributed over the four consecutive decennial periods in the proportions following:—twenty-eight between 50 and 60; forty-one between 60 and 70; twenty-five between 70 and 80; and six beyond 80 years of age. Thus, advancing years and mature age, which have brought this source of mortality to so high a figure, enable the Society to show, in comparison with younger associations, a great improvement in the survivancy of its risks, and a much less serious loss in the business of life assurance. In his last report on the deaths in the Standard Company, Dr Christison, in reference to diseases of the heart, mentions that "no improvement has taken place between the one quinquennium and the other in the survivancy of the present risks after their acceptance. Formerly this appeared to be two-fifths of the expectation of life. On the present occasion the average survivancy of each is 9·22 years, the average expectation term 23·5 years; so that the ratio is again nearly two-fifths." And he adds, "It may almost be assumed, therefore, that the Company has nearly attained the limit of improvement, so far as this cause of mortality is concerned." The experience of every life association, however, as it reaches mature age, and obtains an average number of risks at every period of life, will, I apprehend, be much more favourable. As regards this Society, it is satisfactory to find that the average survivancy of each of the 122 emerged risks of this class is 17·93 years, the average expectation being 25·69 years. Thus each attained, on an average, considerably upwards of three-fifths of his expectation term; and there is reason to expect, in future investigations, a still more favourable return. Diseases of the heart, as a class, is one in which much may be done in diminishing loss. Attention to family predisposition, avoiding as far as possible the gouty and rheumatic habits, and careful examination of the chest, will tend to exclude many who might otherwise become claims at an early age on the benefits of life assurance. Still, chronic heart disease, with its kindred and often associated apoplexy and palsy, must prove a fruitful source of death, even under the most rigid system of examination. The great organ of the circulation, and its innumerable vessels, after long years of unceasing action, must become subject to change and decay—to slow, progressive degeneration, which no skill or scrutiny can always detect, and whose existence is only disclosed when the palsied limbs, or oppressed brain, or pulseless heart, have suddenly and unexpectedly declared how irreparable it is.

Of these victims of heart disease it was known in regard to 15 of the number, that, previous to acceptance, they had been affected with rheumatic fever, or were hereditarily predisposed to it; and in regard to 10 others, that they had suffered from rheumatic gout, or were members of gouty families. Those who are best informed in regard to the intimate relation and frequent association of these blood disorders with disease of the heart and its vessels, will be best able to conjecture in how many others, after acceptance, the origin of the fatal malady was laid in the constitutional tendency to rheumatism and gout.

The following table exhibits the mortality from chronic disease of the heart, compared with that from all other causes, at six decennial periods, and the percentage of death at the successive ages:—

Age at Death.	From all Causes.	From Heart Disease.	Ratio per Cent.
Between 20 and 30,	33	0	0·
... 30 ,, 40,	106	8	7·55
... 40 ,, 50,	167	14	8·38
... 50 ,, 60,	245	28	11·43
... 60 ,, 70,	242	41	16·94
Above 70,	182	31	17·03
Total, . . .	975	122	12·51

Of the 11 cases of aneurism, 5 occupied the aorta, and 1 the subclavian artery. The seat of the disease in the others is not ascertained. One death occurred before 50; five between 50 and 60; and five between 60 and 70. One of the parties had rheumatic fever three years before acceptance, and another acknowledged the death of a brother from disease of the heart.

VI. Under Diseases of the Digestive Organs there is a diminished mortality—that is, from 13¾ per cent. during the former period to 11¾ per cent. of the total mortality during the last seven years. Chronic disease of the stomach and bowels, and chronic disease of the liver, constitute the chief causes of death under this head; the former, however, in considerably diminished numbers; the latter in nearly the same proportion as in the last investigation —the one yielding 3½ per cent., the other 5 per cent. of the general mortality.

The average survivancy of the 31 emerged risks from disease of stomach and bowels was 17·52 years, instead of 26·36 years—their average expectation of life. The average survivancy of the 49 risks from disease of the liver was 13·44 years in place of 27·04 years—their average expectation term. The greatest mortality from stomach disease occurred between 60 and 70 years of age—twelve deaths having taken place during that decennium; nine during the previous decennium; three during the period between 30 and 40; three during that between 40 and 50; and four during that between 70 and 80. The largest mortality from liver disease occurred between 50 and 60 —sixteen out of 49 deaths occupying that period—the remainder, in nearly equal proportions, being distributed over the six decennial periods immediately preceding and following.

This is the class which, along with that of diseases of the urinary organs, next in order, is the chief source of loss from the prevalence of intemperate habits; for I cannot agree with Mr Neison in considering diseases of the nervous system as a class directly connected with habits of this description. No doubt he can point to delirium tremens, to softening and effusion, and some other chronic affections of the brain, as intimately connected with the excessive use of stimulants; and it may with truth be said that there is, perhaps, no class of disease which may not be developed and fostered by such vicious indulgence; still, the great amount of mortality from diseases of the nervous system, such as apoplexy and palsy, cannot be said to arise directly from intemperance. Were this the case, our tables would demonstrate these diseases as prevalent at a period of life far earlier than they do; and, instead of their ranking with heart disease and other affections of the vascular system, to which they more properly belong, as the diseases of advanced life and old age, we would find the period of their greatest prevalence to correspond more with that of delirium tremens, of liver and kidney disease, which is found to be that of manhood and middle age. The drunkard falls before the shock of an accident or operation: he is cut down by every fatal epidemic. The malignant cholera, the contagious fever, the dysentery and influenza, which may spare the sober and temperate, light on him with unusual severity. He cannot stand an attack of inflammation of the lungs or other internal organ; and quickly succumbs under a hæmorrhage or other exhausting discharge. He does not live half his days. The habits of the intemperate favour the development of gout and other blood-poisons, engendering diseases both of the vascular and nervous systems, and in this way bear a part in loading the columns of our mortality tables; but it is chiefly through the digestive, assimilating, and depurating organs that intemperance directly damages health, shortens life, and occasions loss in the business of life assurance. It would be unfair, however, to conclude that an increase of deaths from these causes is to be regarded as proof of the increase of intemperance in the community. Many of the affections of the stomach, and liver, and kidney, which terminate fatally, have no connection with such a cause; all we can admit is, that many of the most rapidly fatal are unhappily so connected. In the experience of this Society, during the last seven years, there has been a considerable decrease in the mortality from delirium tremens, as well as from diseases of the digestive organs. This, I trust, will be regarded as an indication of improved habits as regards temperance among its members, even though the fact of an increased mortality from nervous diseases may weigh against it, seeing that that mortality chiefly arises from diseases to which old age itself gives the most powerful predisposition.

Of the 31 emerged risks from stomach and bowel disease, it was known, in regard to six of the number previous to acceptance, that they had suffered from dyspepsia; of two, that they had been subject to gout; and of one, that he had been affected with jaundice. In six of the number, scirrhus and cancer of the stomach was the fatal termination; in three, ulceration of the bowels; in three, diarrhœa; in two, perforation; and in one, stricture. Wasting, hæmorrhage, and other symptoms of organic disease were present in many others. In no case was intemperance in the proposer ascertained to exist previous to acceptance.

Of the 49 emerged liver-risks, it was known in regard to four, previous to acceptance, that they were bilious; to three others, that they were dyspeptic; to three, that they had suffered from rheumatic fever; and to others, that they had been subject to piles. In one there were suspicions of his continued sobriety; and two were the offspring of intemperate parents. Two had long been resident in tropical climates. The professions or occupations of the 49 emerged liver-risks were thirty in number. Nineteen represented one each; drapers, agents, farmers, landed proprietors, bankers, clergymen, and physicians, two each; millers, three; writers, four; and merchants, five each. The four remaining risks were females. In two of the 49, hæmatemesis preceded the fatal issue. In seven, jaundice; and in eleven, dropsy was a prominent symptom. In three only was there a record of *post-mortem* examination.

VII. Of deaths from Diseases of the Urinary Organs, there is a slight increase. This class on the last occasion accounted for 30 deaths, or 4½ per cent. of the whole; on the present they number 52, or 5¼ per cent. of the mortality. The increase arises entirely from one cause, namely, disease of the kidney, which rises from 15 to 39, —that is, from 2¼ per cent. to 4 per cent. of the total mortality. The united endurance of these 39 emerged risks was 614·44 instead of 1068·49 years; that is, each survived acceptance on an average 15·76 years in place of 27·40. Seven died between 30 and 40; three between 40 and 50; twelve between 50 and 60; twelve between 60 and 70; three between 70 and 80; and two between 80 and 90 years of age. The deaths were diffused over 24 professions or occupations, 17 contributing one each; land-agents, commercial agents, writers' clerks, landowners, and noblemen, two each; while writers and merchants gave five each; and two belonged to the female sex. Of two of the number it was known before acceptance, that they were free livers; of two, that they were subject to sore throat; of three, that they were dyspeptic; and of three, that they were gouty. The fatal event was preceded, in two instances by hæmaturia; in three by palsy; in three by heart disease; in six by coma; and in ten by dropsy. In four cases, the true cause of death was ascertained by *post-mortem* examination. Thus, by greater accuracy in the returns of the causes of death, dropsy has nearly disappeared from our nosological table, and no doubt will shortly be extinguished, and give place to cardiac, hepatic, and renal disease as the true cause of death. In like manner, the term serous apoplexy will, by and by, fall into disuse, when the coma, and palsy, and other cerebral affections, which have been considered as indicative of such a condition, shall be referred to the true primary disease, and a more correct nomenclature adopted.

VIII. The deaths in Childbed and Diseases of the Uterus are only two in number. In the one case abortion, in the other ovarian dropsy was the fatal cause,—in the former at 28, in the latter at 66 years of age.

IX. In the ninth class, that of Diseases of the Joints, there is an increase of deaths: 14 emerged risks, against 4 in the former investigation. Rheumatism, acute in six and chronic in one case, was the cause of half the mortality; disease of the joints in five, and of the spine in two, accounts for the remainder. In two of the rheumatic cases a predisposition to the disease was ascertained before acceptance. Rheumatism and gout seldom appear in mortality tables as the immediate case of death; still they are two of the most influential agents in shortening the duration of life, chiefly through the effects they produce directly or indirectly on the heart and vascular system. To this subject attention has been directed in former reports.

X. Diseases of the Integumentary System.—In last investigation, two cases of carbuncle supplied the only entry under this head; in the present, there is no death to report.

XI. Under the name of Violent Death there are 29 emerged risks, or 3 per cent. of the total mortality. Through suicide, or drowning, or accidental injury, these 29, whose united expectation on acceptance was 885·89 years, survived only 267·09 years; that is, each on an average lived 9·21 years, in place of 30·55 years, their average expectation term.

The accidents of travelling account for ten deaths: six persons were killed by being thrown from gigs; one by fall from an omnibus; one by being thrown from his horse; one perished in the wreck of a steamer; and one by the upsetting of a boat. Two persons were drowned while bathing; two were killed by falling from a height; one was accidentally shot, and another accidentally shot himself; one was murdered by poachers; and one perished in the ruins of the great fire at Newcastle. One was killed by the bursting of a steam-engine; one was mortally wounded by steam-engine machinery; one was crushed to death at a railway station; and another by accidental injury not explained. One was murdered by a knife-wound in the neck; two perished by self-inflicted gun-shot wounds; two by hanging, and two by drowning themselves. These distressing casualties, numerous as they are, bear a considerably smaller proportion to the general mortality than is exhibited in the experience of similar institutions.

XII. Lastly, as some compensation for the loss inflicted by these early deaths, we record an equal number of emerged risks under the head of Old Age and Natural Decay,—of 29 whose conjunct expectation on acceptance was 538·84 years, but who outlived that term till their united survivancy amounted to 708·85 years,—each on an average thus attaining 24·44 years in place of 18·58 years, their average expectation of life. Of these old age risks, two emerged before the 70th year; sixteen between the 70th and 80th years; and eleven after the 80th year; the oldest of the brotherhood, and an early member of the Society, at the age of 94. Of these 29, twenty-three were males and six females; of the 23, five were merchants, four belonged to public offices, three were clergymen, two were private gentlemen, and two were farmers. One nobleman, one landed proprietor, one physician, one sugar-refiner, one watchmaker, one clothier, and one printer, completed the list.

Of the 975 risks which have emerged since our former investigation, 182 had passed the age of 70, and of these 32 had passed the age of 80. It is creditable to those on whom devolves the duty of framing the certificates of death, that so few as 29 should be returned under the head of old age and natural decay. Greater accuracy, however, it is hoped, will yet be attained; and greater value, consequently, attached to these records of death among the assured, when the special disease shall have been recognised, even at the latest term of life, and natural decay shall have yielded up its percentage of mortality, to be distributed over our tables among the *diseases* incident to *old age*.

Three deaths remain to be noticed, the causes of which have not been ascertained, or rather, are not ascertainable. In one, indeed, the proof of death is not complete, a doubt still resting on the identity of the party. In the other two the proof of death is satisfactory; but the cause in one case is not ascertained, in consequence of the death occurring in a foreign land; and in the other is withheld, from the circumstance that the deceased on his death-bed obstinately and persistently refused the aid of any physician, while the friends neglected the only means in their power of supplying the necessary information, by obtaining a *post-mortem* examination.

I have thus endeavoured to lay before you some account of the 975 lives that have fallen during the last seven years of the Scottish Widows' Fund Society's experience. It remains that I should draw some practical conclusions from this experience, in connection with that of the previous thirty-eight years of the Society's existence, embracing the large number of 2307 deaths; but time does not permit me at present, and I must reserve the subject, so full of interest, for your consideration on some future occasion.

TABLE I.

Showing the Diseases of which Persons Assured by the Scottish Widows' Fund Society have died, from 1853 *to* 1859 *inclusive; and the Age, by Decennial Periods, at which Death occurred.*

Causes of Death.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	Above 80.	Total.
CLASS I.								
Small-pox,	1	1	1	1	...	...	...	4
Scarlatina,	1	...	4	...	...	...	...	5
Diarrhœa,	1	...	1	2	1	2	...	7
Dysentery,	...	...	...	2	5	3	...	10
Cholera,	1	...	6	7	2	1	...	17
Influenza,	...	1	...	1	2	2	...	6
Fever (Continued),	5	13	4	14	11	1	...	48
Erysipelas,	1	...	1	2	1	3	1	9
Hydrophobia,	...	...	...	1	...	...	...	1
CLASS II.								
Inflammation,	...	...	1	...	1	...	...	2
Dropsy,	...	1	...	2	...	1	...	4
Abscess,	...	1	1	1	...	...	...	3
Mortification,	...	...	...	1	4	1	...	6
Scrofula,	...	...	1	...	...	...	...	1
Cancer,	...	1	4	5	15	2	1	28
Tumour,	...	...	...	2	1	...	...	3
Gout,	...	...	...	2	2	...	...	4
Atrophy,	1	1	...	...	...	1	...	3
Sudden Death,	...	1	...	2	1	1	...	5
CLASS III.								
Cephalitis,	...	1	4	4	...	...	...	9
Apoplexy,	1	4	9	21	17	12	3	67
Paralysis,	1	2	7	19	24	24	2	79
Tetanus,	...	...	...	1	...	...	...	1
Epilepsy,	...	...	...	2	...	...	...	2
Insanity,	...	1	...	2	...	...	...	3
Delirium Tremens,	...	3	3	1	...	...	...	7
Disease of the Brain,	1	9	17	12	16	10	1	66
Carry forward,	14	40	64	107	103	64	8	400

TABLE I.—*Continued.*

Causes of Death.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	Above 80.	Total.
Brought forward,	14	40	64	107	103	64	8	400
CLASS IV.								
Laryngitis,	...	2	...	...	2	...	...	4
Bronchitis,	...	2	3	9	18	9	3	44
Pleurisy,	...	2	1	2	2	...	...	7
Pneumonia,	1	4	9	10	12	5	1	42
Hydrothorax,	...	...	3	1	2	1	...	7
Asthma,	...	...	...	...	1	...	...	1
Consumption,	9	16	22	16	3	...	...	66
Disease of the Lungs,	...	3	9	6	4	3	...	25
CLASS V.								
Pericarditis,	...	...	...	1	1	...	...	2
Aneurism,	...	...	1	5	5	...	...	11
Disease of the Heart,	...	8	14	28	41	25	6	122
CLASS VI.								
Gastritis Enteritis,	...	3	1	3	1	1	...	9
Peritonitis,	3	...	3	2	...	...	...	8
Ulceration of Bowels,	...	...	2	...	...	1	...	3
Ileus,	...	1	...	1	1	2	...	5
Hæmatemesis,	...	...	1	1	4	1	...	7
Disease of Stomach and Bowels,	...	3	3	9	12	4	...	31
Hepatitis,	...	1	1	...	...	...	...	2
Jaundice,	...	...	...	...	1	...	...	1
Disease of the Liver,	1	4	13	16	7	7	1	49
CLASS VII.								
Ischuria,	...	...	...	1	...	1	...	2
Diabetes,	...	1	1	1	1	...	...	4
Cystitis,	...	...	...	...	1	1	...	2
Disease of Kidney,	...	7	3	12	12	3	2	39
Disease of Bladder,	...	...	...	...	2	3	...	5
CLASS VIII.								
Childbirth,	1	...	...	...	...	...	...	1
Ovarian Dropsy,	...	...	...	...	1	...	...	1
CLASS IX.								
Rheumatism,	...	...	4	2	1	...	...	7
Disease of Joints,	...	1	2	...	...	2	...	5
Disease of Spine,	1	...	...	...	...	1	...	2
CLASS X. No Deaths.								
CLASS XI.								
Violent Death,	3	8	6	11	1	...	...	29
CLASS XII.								
Old Age,	...	...	...	...	2	16	11	29
Causes not ascertained,	...	...	1	1	1	...	...	3
	33	106	167	245	242	150	32	975

TABLE II.

Showing the Diseases of which Persons Assured by the Scottish Widows' Fund Society have died, from 1815 *to* 1859 *inclusive; and the Age, by Decennial Periods, at which Death occurred.*

Causes of Death.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	Above 80.	Total.
CLASS I.								
Small-pox, ...	1	1	1	1	...	...	...	4
Scarlatina, ...	1	4	4	1	...	...	...	10
Diarrhœa, ...	1	1	1	4	4	3	...	14
Dysentery, ...	3	1	4	5	12	5	1	31
Cholera, ...	4	4	13	19	8	1	...	49
Influenza, ...	...	1	4	3	9	7	1	25
Ague, ...	...	...	1	...	...	...	...	1
Fever (Remittent), ...	1	1	...	...	1	...	...	3
Fever (Continued), . . .	8	36	42	49	27	3	...	165
Erysipelas, ...	2	3	5	6	4	5	2	27
Hydrophobia, ...	...	...	...	1	...	...	...	1
CLASS II.								
Hæmorrhage, ...	1	...	2	1	1	1	...	6
Inflammation, ...	...	...	1	...	1	...	...	2
Dropsy, ...	...	2	4	6	3	2	...	17
Abscess, ...	...	1	2	1	...	1	...	5
Mortification, ...	1	...	...	5	9	2	...	17
Scrofula, ...	...	...	1	...	...	...	...	1
Cancer, ...	1	1	6	9	19	2	1	39
Tumour, ...	...	2	1	6	3	3	...	15
Gout, ...	...	...	...	3	3	1	...	7
Atrophy, ...	2	3	1	1	1	1	1	10
Debility, ...	...	1	2	2	9	3	...	17
Sudden Death, ...	...	4	3	3	2	3	...	15
CLASS III.								
Cephalitis, ...	2	6	16	11	6	...	...	41
Apoplexy, ...	3	10	31	46	54	23	5	172
Paralysis, ...	1	5	11	28	37	40	6	128
Convulsions, ...	...	...	1	1	...	...	...	2
Tetanus, ...	...	...	1	2	...	...	...	3
Epilepsy, ...	...	...	3	3	...	1	...	7
Insanity, ...	...	3	2	3	...	...	...	8
Delirium Tremens, ...	1	6	10	2	1	...	...	20
Disease of Brain, ...	4	20	35	29	32	14	2	136
CLASS IV.								
Laryngitis, ...	...	4	4	1	3	...	...	12
Bronchitis, ...	2	8	9	20	31	20	8	98
Pleurisy, ...	1	3	4	2	5	...	...	15
Pneumonia, ...	1	5	16	19	15	10	1	67
Hydrothorax, ...	...	1	9	9	8	4	2	33
Asthma, ...	...	...	...	2	2	1	...	5
Consumption, ...	24	63	48	33	11	1	...	180
Disease of Lungs, ...	1	10	17	15	13	8	3	67
Carry forward, . .	66	210	315	352	334	165	33	1475

TABLE II.—*Continued.*

Causes of Death.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	Above 80.	Total.
Brought forward,	66	210	315	352	334	165	33	1475
CLASS V.								
Pericarditis,	...	2	2	1	1	...	...	6
Aneurism,	...	1	7	8	8	...	1	25
Disease of Heart,	1	17	30	63	72	33	7	223
CLASS VI.								
Gastritis Enteritis,	2	5	5	6	3	1	...	22
Peritonitis,	5	1	4	3	...	...	...	13
Ulceration of Bowels,	...	3	4	1	4	2	...	14
Hernia,	...	1	1	...	1	...	...	3
Ileus,	...	1	3	4	3	3	...	14
Hæmatemesis,	...	1	2	2	4	1	...	10
Disease of Stomach and Bowels,	4	11	11	30	26	13	...	95
Hepatitis,	...	1	3	5	2	1	...	12
Jaundice,	...	1	1	1	4	...	...	7
Disease of Liver,	1	7	25	34	14	14	1	96
CLASS VII.								
Ischuria,	...	...	...	2	...	2	...	4
Diabetes,	...	2	2	2	2	...	...	8
Cystitis,	...	...	...	1	3	6	1	11
Stone,	...	...	...	...	1	1	...	2
Disease of Kidney,	...	10	7	24	16	3	2	62
Disease of Bladder,	...	...	...	1	5	11	1	18
CLASS VIII.								
Childbirth,	1	3	2	...	...	...	...	6
Ovarian Dropsy,	...	...	...	...	1	...	...	1
Disease of Uterus,	...	...	4	...	1	...	...	5
CLASS IX.								
Rheumatism,	...	1	5	3	3	...	...	12
Disease of Joints,	...	2	2	...	1	2	...	7
Disease of Spine,	1	...	...	...	...	1	...	2
CLASS X.								
Carbuncle,	...	...	...	1	...	1	...	2
CLASS XI.								
Violent Death,	4	18	18	21	3	1	...	65
CLASS XII.								
Old Age,	...	...	...	...	2	28	26	56
Causes not ascertained,	...	...	...	...	...	...	...	31
	85	298	453	565	514	289	72	2307

ARTICLE II.—*Notes on the Hospitals of Munich.* By A. MERCER ADAM, M.D., Edin., late Physician to the Dumfries and Galloway Royal Infirmary.

(*No. VI. of "Medical Notes from the Continent," continued from* Vol. V., p. 338.)

IN THE HOSPITALS OF MUNICH.

"Ich ging zum Hospitale,
Da fand ich Alles nett,
Viel Grütz' und Kraut zum Mahle
Und reinlich Krankenbett."—UHLAND.

LIKE all who have visited Munich, I am still haunted by pleasant memories of that city, and, were this a fitting time and place, I would fain embody among these "Notes" a few sketches of its life and manners. Its noble art-galleries, stored with the masterpieces of painting and sculpture; its splendid churches; its new palace, adorned by Schnorr's remarkable fresco-illustrations of that great Teutonic epic, the *Niebelungen-Lied;* its public library; its museums; the studios of its artists; and its scientific institutions; all seem to rise up in vision before me, and to claim a passing word. But this must be denied. I dare not be tempted to linger over these; my journey assumes to be a medical one—so let us hasten onwards.

Yet I cannot take leave of Munich without describing its hospitals, inasmuch as they possess many features of great interest to the medical profession. And first, as regards

THE GENERAL HOSPITAL OF MUNICH.

I left the town, accompanied by Dr Lindwurm, and drove into a suburb named after the late king (the *Ludwig-vorstadt*), where we came upon the *Theresienwiese*, the park where stands the celebrated Bavarian "Hall of Fame." Within the portals of this hall, the busts of all distinguished Bavarians find a niche, and the colossal statue of Bavaria by Schwantaler,—a female figure upwards of 60 feet high, accompanied by a correspondingly gigantic lion,—towers above the edifice as the presiding *genius loci.* Just at the entrance to the *Theresienwiese*, in a cheerful and salubrious situation, stands the *Allgemeine Krankenhaus*, or general hospital of the city, a large building enclosing two spacious courtyards, and surrounded by neat shrubberies and well-kept gardens. An inscription on its walls speaks of its foundation by King Maximilian in 1813:—

AEGRORUM MEDELÆ ET SOLAMINI BENEVOLENTIA.
MAXIMILIANI JOSEPHI REGIS.
MDCCCXIII.

It contains 54 small wards, each having 12 beds, and between 40 and 50 private rooms for patients who can afford to pay a higher rate for their board. A suite of these separate rooms is reserved for the accommodation of any of the court-servants who may fall ill, where they are treated and maintained at the expense of the king. Other chambers are specially appropriated to sick students of the University and Art-Academies, etc. The wards are about 38 feet long, 24 feet wide, and 14 feet high; and each patient, supposing all the twelve beds to be occupied, has a supply of 1135 cubic feet of air. This is rather a scanty allowance of air compared with that in the wards of most institutions; thus in Guy's Hospital there is a cubic capacity of from 1600 to 1800 feet per head, and in most of the French military and civil hospitals each patient has a supply of 1500 feet, which is regarded by sanitary authorities as the minimum quantity necessary for the health of the inmates. But the statistics of the Munich Hospital, as we shall presently see, show a very low rate of mortality, which is probably attributable to the existence of a very efficient system of ventilation, which compensates for the defective size and capacity of the wards. The ventilating apparatus in use was invented by Dr Häberl, a very ingenious man, who was appointed head-physician and director of the hospital on its being opened in 1813. It consists of two parts: the one a suction-pipe, which abstracts all the foul atmosphere from the wards; the other a ventilator, by the pressure of which a greater or less supply of fresh air is introduced into the chamber, according to the season of the year, the number of occupants, etc. The apparatus possesses many advantages; it is entirely self-acting, requiring no superintendence or regulation by the nurses, and the medical men report very favourably on its simplicity and efficiency. Another circumstance, which has doubtless contributed to the salubrity of the wards here (as at Berlin and in all the other hospitals where I have seen it used), is the varnishing of the floors of the wards with a composition of linseed oil and litharge, which invests the porous wood with a hard shining coat. Floors thus varnished are unaffected by the temperature; they are easily kept sweet and clean; and they are quite impervious to all foul discharges or unpleasant fluids which may be accidentally spilled upon them. The varnish is also very durable; it is only renewed once a year in Munich hospital, except in some of the clinical wards, where it requires to be applied half-yearly, as it is quickly worn away by the feet of the crowds of students who daily cross these floors. Everywhere that I have seen it used, the physicians have spoken to me in the highest terms of the increased freshness and salubrity which it imparts to the wards. Skoda's clinical wards are the only varnished floors in the Vienna hospital, and they always smell sweeter than any of the others in the building. Miss Nightingale, in her evidence before the Army Sanitary Commissioners, as well as in her recently published work on the construction and management of hospitals, recommends the adoption of some such varnish for the floors of Army Hospitals;[1] so, in the hope that it may prove useful to some of my professional brethren, who may wish to try it in their wards, I append the receipt for the manufacture of the preparation.[2]

All the lobbies and corridors throughout the house are paved with triangular slabs of a cream-coloured lime-stone, which is very hard, and carries as high a polish as Dutch tiles.

The patients sleep in those immemorial wooden boxes which the Germans dignify by the name of beds. Has the reader ever slept in a German bed? Perhaps he has been accustomed to stretch his limbs out in the vast area of an old-fashioned English four-poster; and on arriving at a German hôtel he is staggered when he is shown a narrow oblong wooden box, set on four short legs, and is told that it is his resting-place. He tumbles into it, but an enormous square pillow, reaching down to the middle of his back, prevents him from getting into his usual easy recumbent posture; and he is forced to tuck himself in with a flimsy quilted coverlet of down, which has been served out to him in lieu of blankets. Yet, joking apart, German beds are not uncomfortable by any means, after one becomes a little accustomed to their use, at least as one finds them in the best hotels of Rhenish Germany and Bavaria. But their construction is not favourable to cleanliness; and in certain districts—for example, in some parts of Austria and Bohemia—the wooden fabrics are alive with active parasites, and woe betide the unsuspecting sleeper! I shudder to this day at the recollection of nights passed in such bedsteads in Prague. One would think that, know-

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[1] "As to floors, the only really clean floor I know is the Berlin *lackered* floor, which is wet-rubbed and dry-rubbed every morning to remove the dust. The French *parquet* is always more or less dusty, although infinitely superior in point of cleanliness and healthiness to our absorbent floor."—Miss Nightingale's *Notes on Nursing*, p. 50.

[2] This varnish is prepared by dissolving finely powdered litharge in boiling linseed oil, stirring the mixture constantly during the process. When the oily compound is removed from the fire, some drying material (*seccatif*) is cautiously added, and the whole is stirred to prevent it from being burned or blackened in the vessel. The varnish requires to be warmed before use, to ensure its perfect fluidity, and it must be well stirred before its application to the floor. I append a note of the quantities of each ingredient used in Munich Hospital for the preparation of sufficient varnish for the floor of a ward 38 feet long and 24 feet broad. I have reduced the original weights (Bavarian standard), which are given within brackets, into our English apothecaries' measure; and I have also added the cost of the ingredients in Germany:—

				s.	*d.*
Linseed oil	℥Lii.	[3¼lbs. Bavn.]	costs about	1	9
Litharge	ʒxi.	[2 Loth. 3 Qt.]	,,	0	0½
"Dryer"	ʒxi.	[do.]	,,	0	1½
Cost of labour,	.	.	.	1	8
Cost of varnish for ward of 912 cubic feet,				3	7

I do not exactly know what is the composition of the *seccatif* or *dryer* which is used, but I presume it resembles the substance known in English commerce by the name of "Patent dryer."

ing all this, Germans would be chary of introducing wooden beds into hospitals, where they must necessarily be occupied by a floating population, chiefly drawn from the lower orders, who, in Germany, are very careless about personal cleanliness. But, in the matter of beds, they have wonderfully conservative ideas in Germany; and, accordingly, we find that in Munich the authorities stoutly resist the introduction of iron bedsteads into the hospital. They admit that iron is more cleanly and durable, and that it does not harbour vermin like wood, but they allege that the cold metal abstracts so much of the animal heat that the patients cannot keep themselves warm in their beds. I argued that, after much observation of the use of iron beds, both in civil and military hospitals in England, I had never heard such a complaint made by the patients; but Germans, as a class, are, as we say in Scotland, very "cauldrife;" so, shrugging their shoulders, my friends said *they* should not like to sleep in iron, *Gott bewahr!* and that patients *might* be infested by bugs even in metallic bedsteads. Wood, said they, was softer and warmer than iron, so the sick had better enjoy the comfort and run the risk! What could I say? *De gustibus*, etc.

The private rooms are neatly fitted up with furniture of cherry and walnut-woods, and in each there is a bell which sets in motion an "indicator" in the corridor, to enable the patient to summon his attendant. The cost of residence and treatment in the hospital varies according to the accommodation furnished; patients who occupy private rooms pay, according to the size, situation, and furniture of the apartment, from 1s. to 2s. a-day. The charges are about one-fourth higher in the winter than in the summer months. The hospital possesses a good many "foundation beds," which entitle their founders to recommend patients all the year round for gratuitous residence and treatment. One of these beds can be founded by a donation to the hospital funds of a sum capable of yielding a clear annual income of 100 florins, or about L.8, 10s. sterling.[1]

A long underground passage conducts from the hospital to the dead-house and *post-mortem* rooms, which are clean, excellently appointed, and well ventilated. Separate vaults are also provided here for the corpses of those who may die of contagious diseases. Cases of small-pox are not received into the general hospital, but are treated in a separate building within the grounds, where they are completely isolated from the other patients.

The staff of the hospital comprises a director or superintendent, four principal physicians, seven assistant physicians, and one medical officer for the care of the small-pox cases. Professors Pfeufer, Ringseis, and Gietl, are the clinical physicians; Professor Rothmund teaches clinical surgery; and a syphilitic *clinique* is conducted by Professor Horner. Professor Buhl, the eminent pathologist, and Dr Lindwurm, of whom I have spoken, are both ordinary physicians.

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[1] It must be recollected that German hospitals are conducted with great economy. Dr Grätzer of Breslau states, that among the German hospitals (not in Prussia), the average cost of each patient is highest in Hamburg and Vienna (about L.1, 11s. per head); it is less in Dresden and Prague (about L.1, 7s.); while in Munich, each patient only costs from 17s. or 20s. during his average residence of sixteen or seventeen days in hospital.—*Wiener Med. Wochenschrift*, December 1854.

The nurses, with one or two exceptions, are Sisters of Mercy, of whom there are sixty, with a superintending superior, attached to the hospital. This order is a very extensive one in Bavaria, where it was established in 1832. In 1854 it possessed no less than 46 religious houses, and numbered 236 professed sisters, 82 novices, and 42 probationary candidates; in all, 360 members. About 300 of these sisters are employed as nurses in hospitals, or as attendants in other charitable institutions. In some places, as in Munich, they are allowed to act as nurses in private families. They are excellent nurses, from having been carefully trained in all the duties of a sick-room; and they keep the wards, the linen of the patients, etc., exceedingly neat and clean. Being all, more or less, women of education and refined feelings, having been properly educated in all that concerns the care of the sick, and being under the immediate control and supervision of a responsible superior, they are calculated to be more efficient than hired nurses. Their duties, having been undertaken from motives of charity and religion, and not from a mercenary spirit, are likely to be performed more conscientiously than if rendered by mere hirelings.[1] The value of trained sisters is becoming more and more acknowledged. All over the continent, institutions are being established for training Catholic Sisters of Mercy and Protestant Deaconesses for the duties of nurses;[2] and even in our own country a feeling is daily gaining ground that the sick in our hospitals might be more advantageously committed to the care of refined and educated Christian women than to the tender mercies of the ignorant Mrs Gamp.

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[1] "The everyday management of a large ward, let alone of a hospital,—the knowing what are the laws of life and death for man, and what the laws of health for wards (and wards are healthy or unhealthy mainly according to the knowledge or ignorance of the nurse),—are not these matters of sufficient importance and difficulty to require learning by experience and careful inquiry, just as much as any other art? They do not come by inspiration to the lady disappointed in love, nor to the poor workhouse drudge hard up for a livelihood.

"And terrible is the injury which has followed to the sick from such wild notions!

"In this respect (and why is it so?), in Roman Catholic countries, both writers and workers are, in theory at least, far before ours. They would never think of such a beginning for a good working Superior or Sister of Charity. And many a Superior has refused to admit a *Postulant* who appeared to have no better 'vocation' or reasons for offering herself than these.

"It is true *we* make 'no vows.' But is a 'vow' necessary to convince us that the true spirit for learning any art, most especially an art of charity, aright, is not a disgust to everything or something else? Do we really place the love of our kind (and of misery, as one branch of it) so low as this? What would the Mère Angélique of Port Royal, what would our own Mrs Fry, have said to this?" —Miss Nightingale's *Notes on Nursing*, p. 75.

[2] "Germany has (1854) nine training establishments for deaconesses; Southern Germany has two, at Carlsruhe and Stuttgard; Northern Germany five, at Berlin, Breslau, Königsberg, Stettin, and Ludwigslust; and Central Germany

The average number of patients treated annually in Munich hospital is upwards of 7000; but during the cholera epidemic of 1853–4 as many as 9271 were treated during a year. The rate of mortality is very low, being about 1 in every 20 treated.[1] It rose as high as 1 in 12 during the cholera year, and also in 1836–7, when there was an epidemic of influenza in Munich.[2]

I cannot recall to mind any cases of special interest in the wards at the time of my visit. I saw many cases of the endemic typhoid fever of Munich, as well as of the remittent fever so common in the neighbouring plains. The endemic fever of Munich resembles that variety so well denominated *pythogenic* by Dr Murchison. It arises from the foul smells which shock the nose in many of the alleys of that city, and from the malaria produced by decomposing organic matter which has not been adequately removed by drainage. It is most prevalent during the months of February and March; but few strangers can reside for six months in Munich without being more or less attacked by it. It is ushered in by rigors; the pulse becomes quick and soft, and the tongue dry and brown; crops of characteristic rose-coloured maculæ appear between the seventh and fourteenth days; there is abdominal tenderness; and, in fatal cases, the glands of the ileum are generally found to be ulcerated. Delirium is rare in the course of this fever; I saw one case in which head symptoms had appeared, and Dr Lindwurm assured me that these were a very unusual complication. Critical discharges frequently occur, in the form of diarrhœa or epistaxis. The latter, when moderate, is regarded as rather favourable to the patient; but when the hemorrhage is great it is arrested by means of pledgets of lint saturated with the Sol. Ferri Perchlorid. In the treatment of this fever gentle febrifuge salines are prescribed at first, and plenty of strong *bouillon* is given to keep up the strength. As soon as the state of the tongue will warrant its use, quinine is administered, in doses of one or two grains every four or six hours; and under this mode of treatment the majority of the cases do very well.

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two, at Kaiserwerth on the Rhine (where Miss Nightingale received much of her experience), and Dresden. France has two, at Paris and Strassburg; Switzerland two; the Netherlands one, at Pittsburg; and Sweden one, at Stockholm."—From the *Armen und Krankenfreund*, May and June 1854; a journal edited by the Rev. Herr Fliedner, inspector of the Kaiserwerth establishment.

[1] Speaking of the German hospitals, Dr Grätzer says (*loc. cit.*) :—"In the hospitals of Dresden, Prague, Berlin, and Vienna, the mortality is 1 in 8, in Breslau 1 in 9, in Dantzic and Hamburg 1 in 12, in Cologne and Königsberg 1 in 13, and, lowest of all, in Munich hospital 1 in 21."

[2] I have to acknowledge my obligations to the excellent Reports of Inspector Thorr for these statistics of the Hospital.

THE GEBÄR-ANSTALT OR LYING-IN HOSPITAL OF MUNICH.

Munich was probably the first city in Europe which possessed a lying-in hospital. Paris established one in the end of the seventeenth century, Dublin and London followed her example about 1745, and Vienna in 1752. But in Munich, as early as 1589, part of the no-longer-existing "Holy Ghost" hospital was set aside for the reception of poor pregnant women, about a fortnight before their expected confinement, where they were maintained gratuitously until after their recovery. In the end of last century the accommodation afforded in this institution became insufficient, and a small house in the suburbs was accordingly taken and fitted up as a maternity hospital. But, in course of time, the requirements of a growing city and an increasing population rendered more space and a greater number of beds absolutely necessary. So, in 1824, part of the new general hospital, which I have described, was allotted to obstetric cases, and a clinical school of midwifery was here, for the first time, established. But this arrangement was found to be far from satisfactory; so other changes ensued, until at length it was found necessary to erect a new building for the purpose. The year 1853 saw the foundation stone laid of the present Lying-in Hospital, which is unquestionably one of the handsomest public edifices in this city of architectural triumphs; and in the year 1856 it was opened for the reception of patients. Its situation is very good, standing in an open space in the western suburb, not crowded in on any side by other buildings, but with a lively promenade passing before it in front, and encircled by tastefully kept gardens. It is built in the form of a long parallelogram, or a single range, 186 feet long, 100 broad, and 65 feet high; having windows both before and behind. Its front is towards the east, and as most of its windows face the east or south-east, the inmates obtain all the available daylight in winter, while they escape the glare and heat of the summer sun. From its front windows we can look down on the animated scene which a public promenade presents; and from those behind, far away to the southward, our view is bounded by the distant Tyrolese Alps, whose white glaciers shine out in relief against the blue sky. It may be considered, from the nature of its internal arrangements, as consisting of a central block, with two equal-sized wings attached, which are separated from it on either side by glass-doors, so that in case of any epidemic the two side divisions can be separated from each other, and the patients completely isolated by the closure of these doors. So there are, as it were, two distinct buildings, identically the same in size and construction, both under the same roof, and only united to and communicating with each other through the intervening medium of the central division I have named. The main entrance consists of three massive doorways, in the central division of the building. We approach them, and are admitted by a watchful old portress into a spacious vestibule, whose handsomely groined roof is supported by carved stone pillars. The reception and waiting rooms, and the *bureaux* of the officials, are entered from this hall. We pass these, and ascend by the broad flight of steps behind to the *mittelstock* or first-floor of the house, where we find a good lecture-room, capable of holding about 100 students. Part of this floor is occupied by the private rooms of the resident physicians, and the remainder forms part of the *Geheime Abtheilung*, or *private department*, where patients are received, at any period of pregnancy, under strict *incognito*, and are secretly delivered.[1] The rooms for such patients are very elegantly furnished, and the cost of board and treatment is about 2s. a-day. We mount to the next floor, where we are ushered into a long hall, filled with the ordinary patients, who are daily expecting their confinements. These poor women are admitted three or four weeks before their accouchement, and are maintained gratuitously during their residence. Most of them wear the picturesque costumes for which the Bavarian peasantry are so remarkable,—the embroidered bodice, the *Riegel-Haube* or silvery swallow-tailed net for the hair, etc., etc. Good-humoured, fresh-complexioned countrywomen, there they sit busily knitting, sewing, or spinning with the immemorial wheel and distaff. This is their sitting or work-room by day, and at night they sleep in the five dormitories which enter from the passage to the right, each of which contains ten beds. The other part of this floor is occupied by the remainder of the *Geheime Abtheilung*. We ascend again, and now reach the last or lying-in stage, in the uppermost part of the house. Hither, like us, must all the ordinary patients come, when the pains of labour overtake them. Their labour is accomplished in one of two *Gebärsale* or accouchement-wards, which are provided with operation-tables similar to those at Würzburg, and with every other necessary appliance. When their delivery is over, the patients are removed into the clinical wards, which extend along the whole length of this upper storey, and they remain here till they are able to be discharged. Each of these clinical wards contains six beds, and is calculated to contain 10,500 cubic feet of air. This aggregation of puerperal patients is a very bad practice, but yet the physicians here prefer it to their isolation in separate apartments (the "cell-system," as they call it). We shall presently have occasion to see that the amount of puerperal fever in this hospital does not say much in favour of their theory. The floors of the wards are lackered like those of the general hospital. The bedsteads are made of dark varnished wood, and there is a small concealed chest near the head for the linen, etc., of the patient. Beside each bedside are placed a little cot for the infant, a night table for the medicines, the urine-glass, etc.; and also a close-stool, which, however, is only allowed to be used during the first six days after delivery. There is an ingenious contrivance in these stools for preventing the escape of unpleasant effluvia. Round the top of the moveable pan, within the chair, runs a broad rim, which is deeply grooved in its centre; and this groove is kept filled with fresh water, so that when the lid is placed in contact with it the cavity of the pan may be considered as hermetically sealed. Every time that the pans are emptied, some solution of sulphate of iron in water is afterwards poured into the pan as a disinfectant. Water-closets are fitted up in every part of the building, but, as usual abroad, they are only poor imitations of ours in England; in fact, to quote Mrs Malaprop, "comparisons are *odor*ous." At the head of each bed hangs a black board, on which the following particulars are written in chalk:—Number, name, age, primipara or multipara, history of labour, position of the child, the day and hour of delivery, and the prescriptions and diet ordered.

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[1] See account of Würzburg Hospital by author, p. 611, vol. iv., Jan. 1859.

A few words now as to the plan of ventilation adopted, of which the officials are very proud. It is essentially an improved modification of Häberl's system, which is used in the general hospital. In 1782,[1] Maret first demonstrated by experiment that the foul air, effluvia, and irrespirable gas of an hospital ward, instead of collecting, as had been supposed, in the upper part of the chamber, fall downwards and accumulate on the floor. Häberl was the first who took advantage of this scientific fact, and practically applied it to purposes of ventilation. He accordingly placed apertures for the removal of foul air in the floor instead of in the ceiling. So, in the floors of all the wards here, there are six grated apertures through which the foul air passes, and is conveyed along "suction-canals" to the chamber stove, where part of it is consumed in the fire and the rest is carried up the chimney. In this manner the impure air is effectually removed. To introduce a constant supply of fresh air into the wards a very ingenious apparatus is fitted up:—On the roof of the building there stands a hexagonal tower, several feet high, penetrated on every side by *jalousies*, which are so constructed that in gusty weather they prevent the entrance of an over-current of air, and yet afford ready admission to the faintest summer zephyr. Within this structure there is a smaller hexagonal tower, having similar valvular blinds on every side, which still further regulate the admission of air from without. The fresh air passes thence along large main-pipes which traverse the whole length of the building, and from them it is conveyed into the several wards by branch-pipes, which enter the lower part of the stoves. It must be recollected that there are no *fireplaces* in German houses, where the rooms are heated by lofty stoves, which consist of an iron furnace, etc., internally, with their exterior surface covered by neat porcelain tiles. Inside the ward-stoves of this hospital there exists an open space or chamber, which extends completely round the internal furnace, between it and the outside porcelain. The fresh air, conducted by the branch-pipes into this space, becomes duly heated here before it passes out, at the upper part of the stove, to impart warmth and purity to the atmosphere of the ward. This system of ventilation has one obvious disadvantage, viz., that the foul-air pipes all communicate with each other. Thus, in cases of puerperal fever, the infection might be conveyed from one part of the house to another.

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[1] *Nouveaux Memoires de l'Académie de Dijon.* 1782.

We go over an excellent museum, with a collection of beautiful obstetric models in wax, fashioned by Herr Zeiller, modeller to the University. A peculiar pelvimeter is used in this hospital, which was invented by Dr Weissbrod, Professor of Clinical Midwifery. It consists of the forefinger of an india-rubber glove, having attached to its point a tape which is graduated on one side, and on the other raised dots corresponding to the markings, thus enabling the operator to ascertain measurement by touch. In using it, the index finger of the right hand, armed with this glovelet, is passed *per vaginam* to the promontory of the sacrum, and the tape is stretched by another finger to the symphysis pubis, by which means the antero-posterior diameter of the pelvis is readily obtained. By changing the direction of the finger, the other diameters are ascertained. This little instrument is exceedingly simple, and is certainly a deal more useful in practice than many of the formidable-looking pelvimeters of other obstetricians.

The average number of births annually in this institution is about 1200 or 1300.

The Lying-in Hospital of Munich, despite its excellent ventilation and many admirable arrangements, has been very unfortunate for the prevalence of puerperal fever, which broke out among the inmates in December 1856, a few months after the hospital was first opened. Cases continued to occur throughout the whole of that winter and spring, and eventually the *Clinique* required to be closed in April. When the hospital was re-opened in June, there were a few mild cases now and then, and the disease gradually disappeared. Of the 1090 patients who were admitted during that unlucky epoch, 88 were attacked by some form of the disease; and of these 37 died, 47 recovered, and 4 remained under treatment at the date of Dr Martin's report on the epidemic.[1]

The history of this outbreak is very instructive, and throws much light on the etiology of puerperal fever. A lull occurred in the course of the epidemic. No cases had occurred for several weeks in January and February; when suddenly two women, who had been normally delivered on the same day, and almost at the same hour, were simultaneously attacked by the disease. An investigation showed that both these patients had been examined by one of the assistants, who had just come from making a *post-mortem* inspection of an infant, having previously washed his hands in a solution of chlorine before leaving the dead-house. The same assistant confessed that the first women who had been attacked in December, had been examined by him under similar circumstances. Here, then, was clear proof that cadaveric infection was one specific cause of the outbreak. It was further found that the epidemic became widened, and the proclivity to the disease increased, by infection introduced into the hospital by the students and practitioners attending the morning *clinique*, who were in the habit of coming hither direct from the dissecting-rooms, or the fever wards of the general hospital, without any change of dress, or precautionary ablutions. All these facts prove the correctness of the theory of Semmelweiss of Vienna, that puerperal fever may be originated and propagated by inoculation of the maternal passages with putrid animal fluids.[1] Nay, further, that it may be induced by the mere presence of cadaveric odours, imported into the atmosphere of the lying-in chamber on the clothes of the accoucheur; and that even washing of the hands in disinfectant fluids (as solutions of chloride of lime, or of cyanide of potassium), while it undoubtedly lessens the risk, by no means ensures perfect safety to the mother, if the attendant has previously been engaged in pathological operations, or in handling putrid animal substances of any kind. And the moral of the whole story is just the truism—which, though very trite, can never be too often recalled to mind—that no accoucheur is justifiable in going to a case of labour, who has recently been engaged in the dissection of dead bodies, or in attending cases of erysipelas, or of surgical or typhoid fever.

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[1] Published in *Monatschrift. für Geburtskunde*, Oct. 1857. See also *Schmidt's Jahrb.* Band 98, Seite 55.

(*To be continued.*)

ARTICLE III.—*Notice of the Revaccination of Children at the Orphan Hospital.* By WILLIAM BROWN, F.R.S.E., F.R.C.S.E.

(*Read before the Medico-Chirurgical Society of Edinburgh.*)

WITHOUT claiming for this little narrative any special importance, I believe that it possesses some interest in connection with the renewed attention at present given to the subject of vaccination.

Children are admitted into the Orphan Hospital between the ages of seven and eleven years. Their destitution constitutes the only claim for admission, and the managers invariably select the most destitute of those who apply. Before being received into the establishment, each child is examined by the medical officer, whose duty it is to reject any one whose bodily formation, constitutional health, or local malady, unfits it for the hospital. I need hardly explain here that the institution is not intended to be an asylum for invalids, but an educational seminary, where children are trained for the active business of life.

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[1] On this subject, see Dr Arneth's admirable paper in *Edin. Monthly Journal*, June 1851. Also the discussion of the Edin. Med.-Chir. Society, *Monthly Jour.*, July 1851, where some remarkable facts are stated by Dr Simpson.

No child has ever been rejected because it had not been vaccinated. But a record is made of all that is known of the child's previous history respecting what are called children's diseases; and when there is no satisfactory mark on the arm, vaccination is performed immediately after admission. It is worthy of notice, that so general does vaccination appear to be among some classes of the people, that this very seldom requires to be done.

In the beginning of last year there was so much said about the prevalence of small-pox, cases of which had occurred in my own practice, that I resolved to vaccinate the whole children of the hospital. I could not do all on one day, nor would this have been very desirable; but I began on the 5th of February, vaccinating them in groups of half a dozen, and completed the work on 27th April. There were in all sixty-one boys and thirty-five girls. The lymph was obtained from the Royal Dispensary, New Town Dispensary, and Edinburgh Parochial Dispensary. The ages of the children were as follows:—Of boys, 2 fifteen, 1 fourteen, 4 thirteen, 7 twelve, 9 eleven, 10 ten, 11 nine, 15 eight, 2 seven; of the girls, 1 fifteen, 1 fourteen, 5 thirteen, 2 twelve, 7 eleven, 7 ten, 3 nine, 6 eight, 3 seven. Two punctures were made on the left arm. They were examined every third or fourth day, and the state of the punctures was then recorded.

With scarcely any exceptions, this record marks "Taken," on the first inspection. This indicates local inflammation following the punctures, but not necessarily the special inflammation arising from the received disease.

On the second inspection, which was six, seven, or eight days after the insertion of the lymph, no vesicle had formed in nearly a half of all the cases. The operation was then repeated with varying success.

On the third inspection, which was three or four days after the second, in a considerable number the areola had faded; in a few it was a circle of one or two inches in diameter; in a very few it was an extensive inflammation, spreading in all directions.

On the whole, I remark that, of these ninety-six children, all vaccinated in the same manner, and under similar circumstances, a small number exhibited the disease in its perfectly normal character, as to vesicle, areola, and duration. In the large majority, the whole course was more rapid than is usually the case; every stage was accelerated, while the vesicle itself deviated somewhat from what we notice in an infant. Those few cases which presented a normal character, contrasted strongly with the large majority.

In active, romping children, it is difficult to preserve the vesicles, even when they are satisfactory, from being ruptured prematurely.

This prevents them from furnishing lymph for the vaccination of others. In two cases, the circumstances seemed to be so favourable, that I removed the lymph from them to other children; but the results were not satisfactory, and I returned to lymph from the dispensaries, which I presume was infantine.

I have mentioned that in every case where the punctures did not inflame, and where vesicles did not form, I repeated the operation. I did so sometimes twice and thrice. We are all aware of the necessity of this in infants. The lymph may be inert, or the quantity applied may be so small, that it is washed away by the blood; but I have done it five times unsuccessfully, and have succeeded on the sixth time. Mothers have sometimes expressed their belief that their child will not take the disease, and that there is no purpose in persevering; but I do not recollect any case where perseverance was not at length rewarded by success.

It is worthy of notice, that of these ninety-six children the failures were nearly all among the youngest. This was not invariably the case, but nearly so. This has been my ordinary experience in the many revaccinations which I have performed in general practice. The elder members of the family presented good normal vesicles and areolæ, while in the younger, either the punctures did not inflame at all, or the vesicles were unsatisfactory.

The subject of vaccination is a large one, and demands much regard from the professsion. A great deal was ascertained by the patient and philosophic observations of Jenner and others. Much, however, still remains to be observed and ascertained. The natural history of the disease, its usual duration, and the normal appearances which are presented during its course, have been well observed, described, and represented, by numerous cultivators of science. There is scarcely anything to be added to what has already been recorded in this respect.

There is much, however, to be done with regard to the relation between cow-pox and small-pox. Is small-pox truly a disease which can be received only once during life? or may it be taken a second or a third time? When small-pox occurs a second time, does it imply that the primary attack has been in any respect abnormal? Is cow-pox certainly a vicarious disease, accomplishing in the body the whole effects produced by small-pox? or is it only a partial and temporary palliative? To what extent does vaccination protect the individual from small-pox? How long does it afford a perfect security? To what extent does it modify the course of small-pox when subsequently received? These and other questions demand our instant and careful consideration.

The epidemiology of this disease also calls for careful consideration. We know that small-pox is never absent from a large place such as Edinburgh. In ordinary seasons these cases remain sporadic, and show no tendency to multiply. At other times, however, while all the external influences, so far as we are aware, are precisely the same, the cases do multiply, each unvaccinated child or adult is attacked, and the disease lays hold even on those whom we call protected. The atmospheric causes of these opposite conditions are now unknown to us; but perhaps some light may be thrown upon them by the persevering researches of intelligent observers and thinkers. I remember a remark made many years ago by one who was attending to such inquiries, that when small-pox was prevalent in a district, vaccinations were very generally successful, but that at other times they were very uncertain. How far such a remark was founded on actual fact, or how far the alleged greater success was due to the greater earnestness of all the parties engaged, I cannot precisely say.

I believe that we had fallen into a state of apathy on the subject of vaccination, and needed to be stirred up. A stereotyped system of opinion, and a routine course of practice, are very pleasant and convenient for us. We do not like to be troubled in thinking of matters that have been thought over before, and which, we imagine, are settled for ever. We have been in the habit of vaccinating the infants of our patients within a certain period after birth, as a mere matter of course. We have considered this right, and have thought no more upon the subject. Some of us had never seen small-pox, or had forgotten its true character. We have now awoke from our fancied security, and find ourselves surrounded by dangers, to the possibility of which we had shut our eyes.

Whether we shall do most good by obtaining a legislative enactment, which shall enforce the vaccination of all, is a point as yet undecided. Such a measure will effect much good; but it will also weaken the feeling of individual responsibility, which needs to be increased in us all, instead of being diminished. Whatever the Legislature may do, let us recollect that we have much to do as individuals, both in promoting the general vaccination of the people, and in observing the cases of small-pox, cow-pox, and their various congeners, which are presented to our notice. We may be able to establish or to disprove their identity. We may ascertain how far the one influences the system, so as to modify the other. We may find how much truth there may be in the opinion adopted by the general public, and supported by some members of our profession, that the immunity from small-pox conferred by small-pox or by cow-pox, exists only for a few years.

Let us record with accuracy and care what we do observe; and if we do not find ourselves enabled to draw any very definite conclusions, we shall at least aid, by our recorded observations, those who, after us, may be more fortunate, or more philosophical.

ARTICLE IV.—*Description of Two Pathological Preparations, exhibiting Rupture of the Uterus from Malignant Disease, and Peculiar Disease of the Ovaries with Peritoneo-rectal Fistula.* By JOHN CLELAND, M.D., Demonstrator of Anatomy in the University of Edinburgh.

THE two following cases may be fitly associated together, since they are both instances of lesion of the peritoneum produced by disease, without supervention of peritonitis in either case. It is to be regretted that no reliable information can be obtained as to the previous history of either; but to both, notwithstanding this disadvantage, a high degree of interest attaches, on account of the remarkable pathological conditions exhibited. They came under notice in bodies which underwent dissection in the dissecting-rooms of the University.

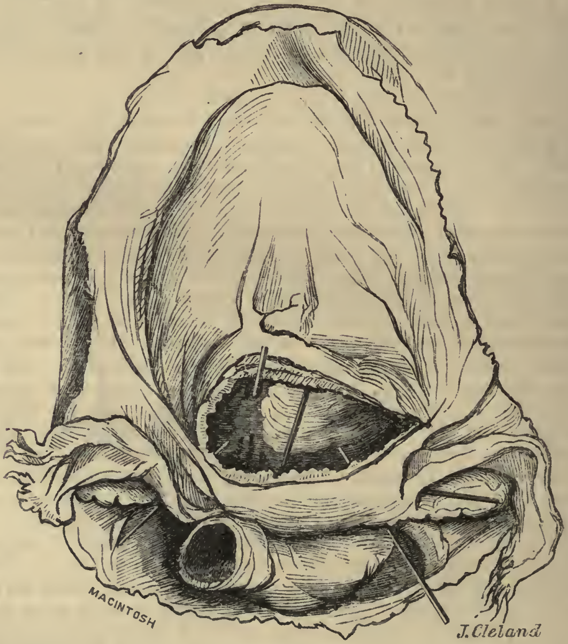
CASE I. RUPTURE OF THE UTERUS FROM MALIGNANT DISEASE.

On opening the peritoneal cavity of a female subject about fifty years of age, and while directing the attention of the dissectors to the relations of the viscera and folds of the peritoneum, I raised a loop of intestine from the pelvis, and, as I did so, observed a wound on the anterior wall of the uterus. Its lips had been in contact; they were smeared with slime, which made them cohere; and were seen in the act of separating. We are, therefore, relieved from any shadow of a doubt of the lesion having existed before death, which might be entertained on account of the regularity of its appearance. It was a transverse rupture of the uterus, about three inches long, and stretched straight across the anterior wall, a little above the line between the uterus and bladder. It could scarcely have been made straighter or more symmetrical had it been done with a scalpel. On more careful examination, it was found that the interior of the uterus was hollowed out into a large cavity by malignant disease. Not a vestige of the cervix was left; but the vagina, which was quite healthy, was continued at once, without any constriction, into this ulcerated cavern. The disease appeared to have quitted, in great measure, the posterior wall of the uterus; for most of that part was comparatively smooth, with a little shredded texture on its surface, but without alteration of the subjacent tissue. On the other hand, the anterior wall and fundus were covered by a growth of ragged villous appendages, which constituted the greater part of their thickness. The greater number of these villi were about a line long, and formed a thick carpet; but a number of others, branching and about four times as long, were interspersed among them. Professor Simpson recognised this appearance as characteristic of malignant disease. The rupture into the peritoneum extended from side to side of the enlarged uterine cavity, and was about three quarters of an inch above the termination of the vagina.

But the disease had also made other perforations. It had distended the uterus so far, that the ovaries were brought into contact with the uterine wall; and on the right side was a small perforation from the cavity of the uterus, opening into the peritoneum between the ovary and Fallopian tube; while on the left side was a perforation as large as a sixpence beneath the ovary. Another small perforation was found, which passed from the back of the uterus into the recto-vesical fossa toward the right side, and was concealed by the way in which the rectum lay in relation to the uterus. More important than any of these, in the deeper part of the lower lip of the great rupture, was observed a lacerated opening into the bladder, so large that a shilling might have been made to pass through it. Notwithstanding all these lesions, there was no appearance of peritonitis.

This case strongly reminds me of a case which occurred in Dr Simpson's Ward, in the Infirmary, three years ago, in which the vagina and uterus were quite continuous, and the uterus converted into a large irregular cavity. Also, in that case, the patient passed urine per vaginam, and in the wall of the vagina no fistulous opening could be discovered, so that there must have been a vesico-uterine communication.

The accompanying sketch exhibits the diseased parts, as seen from the interior of the pelvis. Above is the outline of the peritoneal aspect of the bladder, and beneath, toward the left side, is the cut end of the rectum. The large rupture of the uterus is kept open by a piece of whalebone, so that you look through it into the uterus, down into the vagina, through which light is represented coming, and into the vesico-uterine communication, in which a porcupine's quill is placed. Quills are also represented passing through the three other perforations from the uterus into the peritoneal cavity.



I have not been able to find anywhere any allusion to rupture or to perforation of the uterus as a result of cancer in absence of pregnancy. Rupture of the uterus happening in pregnancy or parturition, is an accident of sufficient frequency to have attracted considerably the attention of accoucheurs; and cases have occurred (see Duparque on *Ruptures of the Uterus*) of fatal rupture from gradual accumulation in the uterus of menstrual discharges. In all these cases, the rupture results from an internal resistance to the uterine walls greater than they are able to bear. The case before us is a different kind of accident. It most probably did not materially hasten the patient's death, or we should have had appearances of peritonitis; and the force which caused the diseased wall of the uterus to give way, must undoubtedly have been the action of the bladder. In all circumstances, the bladder must pull with a certain amount of force upon the anterior wall of the uterus every time that it is distended or contracted. Either over-distention or violent contraction of the bladder may have caused the rupture of the uterus in this case. This accounts for the extreme regularity of the line of rupture: it probably corresponded with a natural cress of the peritoneum; and it was at right angles to the force by which it was occasioned. Very likely the perforation of the bladder was effected at the same time.

CASE II. DISEASE OF THE OVARIES WITH PERITONEO-RECTAL FISTULA.

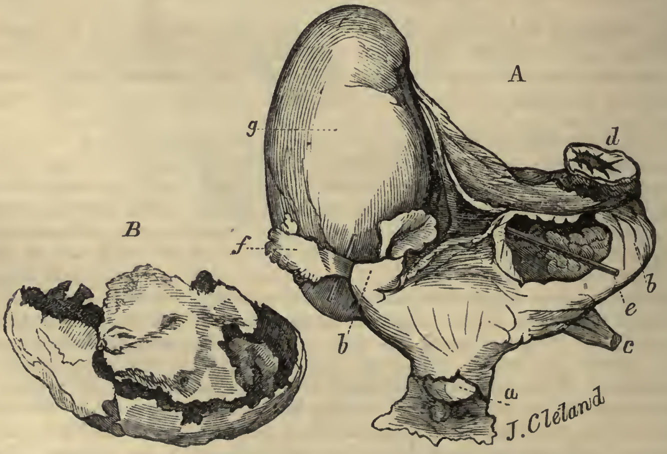
The subject in which the condition of parts about to be described occurred, was the body of a woman between 50 and 60 years old. When the peritoneal cavity was opened, the uterus and ovaries were observed to be altered and enlarged by disease; and the forefinger, on being placed between the uterus and rectum, came in contact with a calcareous body lying towards the left side, quite bare of peritoneum, but concealed from sight by the position of the uterus and appendages. That the parts involved in pathological changes might not be injured, they were specially taken care of during the dissection of the abdomen, and the pelvic viscera were afterwards removed in one mass.

The uterus was swollen to more than twice its normal dimensions: its walls, on its being opened, presented a thickness varying from a quarter to half an inch; and the cavity was gorged with a thick, white substance, of almost cheesy consistence, which, in its physical characteristics, resembled tubercular deposit. No trace of the mucous membrane of the uterus remained; the boundaries of the uterine cavity were not defined; but the substance which filled the centre was infiltrated among the deeper fibres of the walls. The os uteri and vagina were healthy; and from the former depended a small quantity of tough, clear mucus.

The Fallopian tubes were, at their origins, hypertrophied to a diameter of four lines, and looked like the cornua uteri of some lower animal. Their thickness was entirely due to development of fibres. On incisions being made into them, they were found to be quite solid, and no traces were found where the canals had been.

On the right side of the pelvis, in contact with the uterus, was a large hard tumour, about the size and of the form of a turkey's egg, with the broad end foremost; only it was somewhat curved upon itself, as if to adapt it to the shape of the pelvis, as its long axis lay horizontally. This tumour presented, over more than half its surface, a free aspect invested with peritoneum; and cul-de-sacs of the serous membrane, which could be followed out by cutting short folds that bound the tumour to its position, showed that it had originally presented a much larger free surface. On cutting into it, it was found to be enveloped by fibrous tissue; and the deeper part of this investment formed a separate layer, firm and tough like fibro-cartilage, but entirely fibrous in structure. Inside this tunic, intimately connected with it, was an imperfect calcareous shell, of almost bony consistency, extended in an irregular fashion over the contents of the tumour, but leaving large spaces uncovered. The fibrous tunic was thinned away in the places where the calcareous shell was thickest, as though the latter had been formed at the expense of the former. The interior was filled with a mass of substance having very much the appearance and somewhat the smell of half-dry putty. It crumbled down in irregular masses, and in powder, when disturbed. Nothing could be made of it by microscopic examination. A small portion shaken with ether was not visibly lessened in bulk. On the upper anterior part of the tumour, the remains of the ovary were discovered on dissection. It was joined to the uterus by a much hypertrophied ligament about half an inch long, whose fibres in great part spread out and entered into the formation of the wall of the tumour. The Fallopian tube of this side was hypertrophied, in the manner already described, for not more than half an inch of its extent; then became abruptly converted into a fibrous band about 1½ inches long, which was folded on itself, and hid from view between the tumour and uterus, and terminated on the part of the tumour nearest the uterus.

On the left side the Fallopian tube continued hypertrophied, and curved outwards and backwards for nearly two inches, forming the anterior margin, and incorporated in the formation, of a cup, in which lay loose the body which had been felt in the peritoneal cavity before the removal of the parts from the pelvis. This body was about the size of a walnut. It consisted of a calcareous shell, corresponding to that of the tumour of the right side, and nearly perfect on the aspect which had lain uncovered, but very incomplete on the aspect which had occupied the base of the cup-like cavity. The contents were soft and slimy, with a disposition in part to cohere. The shell was structureless, as seen on examination of a portion under the microscope. It is impossible to say definitely how the Fallopian tube terminated on this side. The cup which contained the tumour was bounded behind by the rectum, and presented two different appearances in its floor. The outer half had a smooth surface broken up into convoluted elevations, like those of the brain in miniature. The inner and deepest part, lying between the rectum and posterior wall of the uterus, presented no such convolutions, and had a rough, shredded, and ulcerated appearance. On opening the rectum, it was found that a fistulous communication, which admitted a porcupine's quill, passed from the deepest ulcerated portion of the cup downwards into the rectum, between two and three inches above the anus. This passage was at least quarter of an inch long, bounded by strong fibrous walls; and its opening into the rectum was drawn up in such a way as to be overhung by a fold immediately above it,—a circumstance calculated to protect it from the ingress of fecal matters. The annexed woodcut will make the arrangement of parts understood.



A. *a* is the cervix uteri, with a little mucus pendant from the os; *b b*, the Fallopian tubes; *c*, round ligament of uterus; *d*, cut end of the rectum; *e* points to a quill which crosses the cup which contained the tumour of the left side, and is passed into the fistula; *f*, the vestiges of the right ovary, attached to the uterus by a thick ligament, beneath which a portion of a quill is placed; *g*, the tumour of the right side. B represents the tumour of the left side, full size.

Although tubercular disease of the ovaries is so rare that Rokitansky states that he has never met with it; and although, as far as I was able to ascertain (which, unfortunately, I was unable to do personally), there was no tubercular deposit in this instance in other organs; yet any doubts which I had entertained as to the tubercular origin of the appearances above detailed, were removed by the exact correspondence of the condition of the interior of the uterus with that described in two cases in the *Pathological Society's Transactions*,—one by Dr Ogle,[1] the other by Dr Bristowe.[2] In the first of these cases the ovaries contained substance like the contents of a vomica of the lung, surrounded by denser substance like that in the uterus. In the second case, one ovary was distended with deposit like that in the uterus.

In a case described by Störk,[3] in which the lungs were almost entirely converted into vomicæ, and the uterus and vagina were gangrenous, each ovary was as large as a man's fist, and filled with white, hard, cretaceous matter.

These are the only approaches to similar cases which I have been able to find.

As regards the fistula, it should be noticed, that it was so formed that, while it served as a passage for draining off matters from the ulcerated seat of the tumour, it would not allow any contents of the rectum to pass into the peritoneum. Its existence, therefore, seems to have been not so much a complication of the disease, as a provision which had prevented serious consequences from following the ulceration of the ovarian tumour. Had not the tumour been, as it were, cut off from the general cavity of the peritoneum by the position of the uterus and altered Fallopian tube, and had not a vent been provided for the products of ulceration, peritonitis must surely have supervened.

Both the preparations described are now in the University Museum.

ARTICLE V.—*Quarterly Report of Cases occurring at the Edinburgh Eye Infirmary*, 140, *George Street.* By BENJAMIN BELL, F.R.C.S.E., and PATRICK HERON WATSON, M.D., F.R.C.S.E.

January 1*st to March* 31*st*, 1860.

Tumours of Eyelids,	4
Wounds, Inflammation, Abscess of do.,	3
Hordeolum,	3
Ophthalmia Tarsi, etc.,	11
Epiphora,	3
Do. from Everted Punctum,	5
Inflammation of Lacrymal Sac, Fistula, etc.,	6
Carry forward,	35

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[1] *Pathol. Soc. Trans.*, iii., p. 136. Other cases are also noticed.

[2] *Pathol. Soc. Trans.*, vi., p. 276.

[3] *Annus Medicus*, ii., p. 245.

Brought forward,	35
Strabismus,	2
Wounds of Conjunctiva, foreign bodies under Lids,	4
Inflammation of Conjunctiva, Acute,	14
Do. Do., Chronic,	13
Do. Do., New-born Infants,	4
Do. Do., Phlyctenular and Pustular,	25
Do. Do., Strumous,	3
Do. Do., Catarrho-rheumatic,	3
Granular Conjunctiva of Palpebræ,	3
Wounds of Cornea, "Fires," etc.,	11
Inflammatory affections of Cornea,	11
Ulcers, Vascular speck of Cornea,	13
Opacities of Cornea,	4
Staphyloma,	1
Oscillation of Iris,	1
Inflammation of Iris, Rheumatic,	3
Do., Strumous,	1
Synechia, Anterior and Posterior, Opacities of Capsule,	5
Cataract, Idiopathic,	3
Do., Traumatic,	3
Dislocation of Lens, from injury,	1
Asthenopia,	3
Hemeralopia, or Night-Blindness,	1
Amaurosis, Glaucoma, Retinitis, etc.,	14
Cases not classified,	6
	187

Encysted Tumour underneath Conjunctiva.—Two cases of this nature have occurred to us lately, and being extremely rare, at least in this country, may be briefly described. The first was a robust-looking, well-grown boy of twelve, who mentioned that he had been hurt in his right eye by a stick, some weeks previously, near the outer angle of the lids. The conjunctiva, when he applied for advice, was entire, but an elastic cyst-like elevation of it could be seen and felt bulging from beneath the upper lid and beyond the margin of the orbit, when the globe was directed inwards. The tumour resembled in bulk a large white currant or small grape, and was semi-transparent. It caused inconvenience, but no pain. Upon the conjunctiva covering it being slit open, the cyst, which was tense and elastic, receded from the scissors, and could not be opened until fixed by a pair of artery forceps. A clear fluid escaped; the containing walls were clipped away, and there has been no return.

The second case occurred in a woman of thirty-four. She directed attention to a fulness at the outer angle of her right eye, which she had discovered very recently. There was obviously a sub-conjunctival cyst occupying exactly the same position as in the boy, only smaller. As in his case, it was partially concealed by the upper lid, and protected by the outer margin of the orbit. It was treated in the same way. Next time when she returned, a similar cyst was noticed at the corresponding part of her other eye; but as it caused little or no inconvenience, she refused to have anything done, and we have not seen her again.

These small tumours seem to answer the description which Dr Mackenzie has given under the title,—"Encysted tumour in the vicinity of the glandulae congregatæ and lacrymal ducts." With him, we have no faith in the etiology of the complaint suggested by some foreign writers. In neither of the cases described did we see reason to connect the tumour in any way whatever with the ducts of the lacrymal gland. It is interesting to find that, out of six cases met with by Beer, and referred to by Dr Mackenzie, in two, the disease, as in our first case, seemed to follow exciting causes of a local kind. With regard to treatment, one wonders to hear that a man of experience and professional eminence like Beer, should be so far misled by his theory about the lacrymal ducts, as to recommend passing a seton through the nostril, with the view of effecting a radical cure. Extirpation of the cyst seems to be the obvious remedy.

Epithelial Cancer of Inner Canthus of Eye, involving Lids and Lateral Aspect of Nose; successful Removal, and Plastic Restoration.—Mrs P., aged 50, was admitted as a patient into the Infirmary on 8th September 1859, on account of epithelial cancer of lids. The ulcerated growth was circular in outline, its margin well defined by a rim of dense indurated tissue, involving the left lateral aspect of the bridge of the nose, the inner canthus, and the commissure of the lids as far as both puncta, and was about the size of a large shilling piece.

She stated that, about 25 years ago, she first observed a little wart which occupied this region, and which she attributed to a kick inflicted by a cow a short time previously. The growth appears to have given her no uneasiness at first; but, after existing for some 17 or 18 years, it began to enlarge rapidly, and became very painful. At this time she applied to a late surgeon in Edinburgh, by whom it was removed, and for four years the cicatrix remained sound. About three years ago, however, she noticed the formation of a pea-like hard body in the scar of the old incision. This ulcerated, slowly increased in size, and has latterly been causing very great annoyance, not simply from the pain by which it is attended, but from the constant epiphora and conjunctival congestion by which it has been accompanied.

On September 9th, 1859, with the assistance of Mr Bell and two pupils, I removed the growth completely by means of the knife; and, mapping out a circular flap from the tissues between the eyebrows, the neck corresponding to the inner end of the right eyebrow, I dissected it up, and slid it downwards, so as to occupy the hiatus caused by the removal of the growth; and as the sac had been freely opened in the removal of the diseased tissues, a free drain for the tears was thus provided without further interference. I then attached the flap of integument with accuracy, by means of silver suture, to the upper and lower eyelids, the rest of the outline of incision, and brought together the margins of the inter-superciliary gap by means of three harelip needles. A good deal of swelling of the frontal region lids and flap ensued during the first three days, but again gradually diminished, the whole lines of apposition healing by the first intention, the under surface of the transplanted flap, of course, suppurating. The sutures were allowed, however, to remain in for ten days, as they appeared to create no irritation.

The patient was retained in hospital until the eighteenth day after the operation—until, in fact, the conjunctival congestion was gone, and the flow of tears down the sac and canal had become quite established. Since then, the patient has visited the Infirmary on several occasions, to show herself. The apparent redundancy of transplanted tissue is quite gone; and, were it not for the diminution of extent in length of the aperture between the lids (which, however, does not interfere with vision), it would be impossible to say that there was any noticeable difference between the two sides of the face. There has been no return of the disease, although it is now nine months since the operation was performed.

The only circumstances which have induced us to mention this case are :—

1*st.* The removal of epithelial cancer, followed by a recurrence of the disease at the end of four years, which still admitted of complete removal, the disease being perfectly defined and localized, without either constitutional or glandular irradiation. These epitheliomata certainly occupy a peculiar position, both as regards the healthy tissues on the one hand, and the heteromorphous tissues on the other. They are assuredly *analogous* growths, but still they have all the destructive tendencies of the malignant. They are local hypergeneses of elements which already exist, and which have assumed a perverted relation to those by which they are surrounded, so that, when produced in great abundance, they invade them, and cause their absorption,—cartilage, elastic tissue, and the arterial tissues alone successfully resisting their progress.

Such a view of the essential nature of these growths, implying, as it does, merely a local pervertion of nutrition, development, and reproduction, and no primary cachexia, as its cause, might seem to require as a corollary, that, when removed, there should be no reproduction. While, however, all practical experience proves that such reproduction is only too frequently the case, it may be accounted for upon two hypotheses,—1*st,* That the diseased structure has not been, in the first instance, entirely removed; and, 2*dly,* That, so long as similar elements are extant as those from which the disease first sprung, it need be no greater matter for surprise to see another appearing in adjacent or distant parts than it should have excited to see the first make its appearance; for here we have, not the formation of a dissimilar element, but the simple hypergenesis of a pre-existing one to explain.

The irradiation of epithelial cancer through the neighbouring lymphatics might seem, at first sight, to invalidate the preceding theory of hypergenesis of already existing analogous structures; but when we remember that such lymphatic ganglia and vessels present a structure analogous in every respect to mucous follicles and epithelial structures, so far as ultimate elements are concerned, the implication of these organs in this excess of development is only in analogy with the ultimate relations we find existing in them, with the same tissues when undergoing inflammation, whether simple or specific.

The practical deduction from such a doctrine is obviously, that while the fact that a growth of the nature of epithelioma by no means prevents its wide implication of other tissues, still, so long as we find it absolutely defined and removable, we have a greater prospect of ultimately favourable results than we could possibly hold out hopes of in the case of a growth, the entire heteromorphism of which implies not simply a local, but a constitutional antecedent perversion. It is from such considerations that we are more inclined to interfere in all cases of limited epithelial growths, whether primary or reproduced, and with a better prognosis than we can possibly hold out under any circumstances in the so-called truly malignant cancers.

The second point which we think worthy of note is the method employed for refilling of the gap occasioned by the extirpation of the disease. The methods most commonly employed under such circumstances, and described in works of operative surgery, consist in mapping out a flap from neighbouring parts with a neck, which is twisted, more or less, upon itself when the flap is fitted into its new site. The Indian method for the restoration of the nose is perhaps the readiest illustration of this plan. The method, however, which I employed in this case required no such extensive twisting, therefore no such narrow neck, and consequently no such interference with and risk to its vitality; nor resulting deformity, nor necessity for a second cosmetic operation for arranging the twisted neck after the flap had become naturalized in its new situation, as the common method usually requires.

The principle consists essentially in taking the tissue for the flap close to the margin of the hiatus; so that, when mapped out and dissected up, it slides into its new site without any twisting or dragging, while its former site is obliterated by either the yielding or accommodation of the tissues still further beyond,—a principle of restoration which assumes its largest development in the admirable operation devised by Mr Syme, and now so generally practised, for restoring the lower lip after its complete removal, on account of cancer affecting the whole part; or in the operation which he practises for the restoration of the nose by lateral flaps borrowed from the cheeks.

Article VI.—*Case of Leucocythemia.* By Dr George Shearer, Resident Physician, Royal Infirmary, Edinburgh.

James Y——, aged 24, a miller by trade, admitted to the wards under the care of Dr Gairdner, on August 6th, 1859.

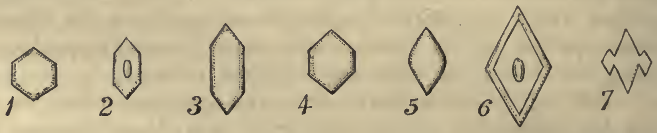
Patient during the previous fortnight had been under Mr Spence's care, in the surgical hospital, for epistaxis, of which he had had several attacks before entering the hospital. As there had been, however, no return of the epistaxis while under Mr Spence's care, he was transferred to the medical house on account of headache, lassitude, and weakness, of which he complained.

On admission, patient appears to be a stout man, of rather full habit, but textures soft and flabby. Face highly blanched, anæmic, and pasty-looking. Complains of a degree of frontal headache, with general languor and inaptitude for exertion. Pupils widely dilated. Gums soft and spongy; bleed on application of very slight pressure. Breath possesses a peculiar fœtor. Appetite good; bowels regular. No evidence of disease in pulmonary or cardiac organs.

On the 9th, a copious bleeding took place from the right nostril, which, however, was readily checked by means of a plug of dry lint. To take dram-doses of sulphate of magnesia, with 25 drops of diluted sulphuric acid, three times a day.

10th.—Examination of abdominal viscera shows a degree of enlargement of both liver and spleen; vertical dulness of both organs, measuring 5 inches. An enormous increase of the white corpuscles was observed in the blood, examined microscopically. This morning, patient's urine presented a considerable precipitate of a somewhat whitish, finely crystalline powder. The urine itself was of a pale-yellow colour, and possessed rather a faint odour: sp. gr. 1010: reaction acid. Concentrated sulphuric acid developed a faint violet tint, showing a deficiency of indican, the normal colouring matter of the urine. Patient complains of pain and uneasiness in both lumbar regions.

The crystalline deposit, examined microscopically, appears to consist mainly of perfect hexagonal crystals of lithic acid, with a few of the ordinary rhomboidal crystals. The transitional forms between rhomboidal crystals with rounded angles, and complete hexagons with elongated lateral planes, could be very well traced in intermediate forms having shortened sides.



1. Perfect hexagon, with equal sides. 2. Hexagon, presenting appearance of a nucleus—the commonest form of all. 3. Hexagonal crystal, with lateral planes elongated. 4. Hexagonal crystal, with its lateral planes shortened. 5. Rhombic crystal—the lateral planes obliterated and represented by rounded angles. 6. Tetrahedral crystal, with double outline and central nucleus. 7. Winged rhombic crystal.

Other forms of crystals more commonly seen, were also observed. Some of the lozenge-shaped crystals presented a double outline, with an apparent nucleus. The precipitate is soluble in the mineral acids, and in caustic potash or ammonia. When a drop of the latter is added to the precipitate under the microscope, it is instantaneously dissolved; but in a very short time, as the ammonia evaporates, beautiful, radiating, asteroid crystals, of extremely delicate appearance, begin to congregate under the eye, until at length the whole field is covered with them. They are, doubtless, crystals of urate of ammonia; the ammonia dissolving, and then combining with the uric acid to form this salt.

At first the hexagonal form and absence of colour in the crystals deposited from this patient's urine rather deceived me. I took them for crystals of cystic oxide until I applied the chemical tests. The addition of nitric acid dissolved the crystals with effervescence; and the subsequent addition of a few drops of caustic ammonia produced a splendid purple solution, from the formation of the purpurate of ammonia of Prout—the murexide of other chemists.

On the following day, the thickness of the crystals, and their faint but evident yellow colour, confirmed me in regarding them as crystals of lithic acid.

On the 15th, the crystalline deposit was still large, but the crystals presented almost entirely the rhomboidal form, a few crystals presenting a winged appearance. Patient still complains of pain in the region of the kidneys, but makes water without difficulty or pain. Slight hæmorrhagic oozing from left nostril.

16th.—Considerable bleeding from the gums this morning. The effused blood appears very thin, and of a dark venous tint. No irritation referable to bladder or urethra; pain in renal regions subdued. To take lime juice, and to use alum and tincture of myrrh for the gums.

18th.—The lithic acid is evidently voided from the bladder in the crystalline form, for it was quite apparent immediately the patient had done micturating. Gums very much consolidated. Complains only of languor and headache. ℞. Ferri Carb. Sacch. gr. v. ter die sumenda.

20th.—Had a warm bath last night, and this morning complains of increased headache and drowsiness. Pulse up to 90.

21st.—Febrile symptoms not allayed; countenance suffused and œdematous, accompanied by an almost typhoid expression. To suspend the use of the saccharated carbonate of iron.

22d.—Pulse 96, rather firm; tongue dry, slightly brown, and beginning to crack. Great inclination to sleep; lies in a constant state of mild stupor, from which, however, he is easily roused. Says he has a severe headache, but no other pain. Bowels purged four times within the last 24 hours.

23d.—Fever unabated. Complains to-day of sickness and gnawing pains in the back, over the region of the kidneys, the pains shooting down towards the loins. Urine somewhat diminished in quantity; entirely free from lithic acid, but containing a very perceptible amount of albumen. ℞. Pulv. Potass. Bitart. ʒj. vespere sumend.

24th.—Pulse 96, full and soft. Powder caused six watery evacuations this morning. Urine to-day deposits abundance of lithates, and contains a small quantity of albumen.

27th.—This morning, upon wakening, epistaxis came on, and continued for three or four hours, until plugging of the nostrils was effected. Ordered 10 grains of gallic acid thrice a day, dissolved in dilute sulphuric acid.

28th.—One of the plugs having become disengaged, epistaxis again came on. Patient also began to vomit a peculiar fluid, of an iron-gray colour, which, examined under the microscope, is seen to contain abundance of blood corpuscles. It is difficult to determine whether the blood so vomited is derived from the mucous membrane of the stomach, or whether it has escaped from the nostrils and been swallowed. The dark appearance of the blood, and the absence of clots, are, however, favourable to the former view.

29th.—Patient has complained since yesterday morning of excessive pain in the right ear. Otitis is suspected, and camomile poultices ordered to be applied to the external ear. In the course of the day some seropurulent matter, mingled with blood, came away, with very marked relief to the patient's sufferings. Seems very much exhausted; is restless and uncomfortable. During the afternoon patient sank gradually, and died quietly at 4 P.M.

P. M., on September 1st, reported by Mr Thom.—Spleen enlarged, weighing 1 lb. 5 oz., of natural consistence; the Malpighian bodies apparently larger and more abundant than usual. *Liver* enlarged, weighing 5 lb. 9 oz., of a pinkish colour, friable, probably fatty. *Stomach* contained no blood, but the mucous surface is in many places studded with petechiæ. Kidneys pale; the mucous lining of the pelvis is thickened and congested—this was probably the cause of the albuminuria. The visceral pleuræ had petechiæ here and there. Lungs emphysematous; otherwise healthy. Heart healthy, weighing 13 oz.; petechiæ on pericardium and endocardium; it contained decolorized clots. The blood, examined microscopically, presented a great excess of white corpuscles, as many as 70 being counted in a single field; while the number of red discs was diminished, and of a fainter colour than usual.

The following is a summary of the facts of the case in regular sequence:—Anæmia, languor, and debility; epistaxis; headache; bleeding from gums; renal pain, with lithiasis; febrile symptoms; disappearance of lithic acid, and appearance of lithates and albumen; diarrhœa; reappearance of lithic acid; uncontrollable epistaxis; hæmatemesis; otitis; exhaustion and death.

P. M. revealed leucocythemia, enlarged spleen, fatty liver, petechiæ on mucous membrane of stomach and on the serous surfaces of peri- and endo-cardium.

1. The relation between the enlargement of the spleen and the excess of white corpuscles in the blood need not here be insisted on; it is sufficient to state, that enlargement and activity of the spleen is not the only condition involving increase of the white corpuscles,—there being at present a case in the hospital in which this condition of the blood coexists with enlargement of the whole lymphatic system of glands, without any detectible enlargement of the splenic organ. In this condition, which has been denominated by Virchow *Leukœmia lymphatica*, the blood differs from that in common cases of leucocythemia in the comparatively small size of the white corpuscles.

2. The fact of a great excess of white corpuscles in the blood in cases of leucocythemia being accompanied by constant diminution of the red discs, appears to militate against the theory put forward by Wharton Jones, and supported by Bennett and others, viz., that the latter are derived from the former by liberation of their included nuclei; for, according to this theory, increased activity in the formation of the white ought "pari passum" to be attended by increased development of red discs, while the reverse is the case. Comparative increase of the white corpuscles is common in a great variety of organic diseases, especially chest affections; but I have also observed it in a marked degree in other affections, such as dysentery, diarrhœa, hæmatemesis, chronic rheumatism, chronic disease of stomach, paraplegia, and uncomplicated diabetes: in all of which one general condition was observed, viz., depreciation of the appetite and emaciation. Now, these facts point, as it appears to me, in quite a different direction for the origin of the red discs, namely, to the blood itself, as their primary source of origin. In the diseases mentioned, many causes operate to produce impoverishment of the blood, such as feeble appetite, wasting discharges, fever, etc.; so that there is either a deficiency of nutritive pabulum taken into the blood for the production of red corpuscles, or these are rapidly melted down to supply the elements of the discharge—hence the pallor and thin-bloodedness observed in these cases. In leucocythemia, again, the nutritive pabulum is appropriated for the formation of the white corpuscles; the blood being thereby impoverished to the extent to which these are increased, development of the red discs is consequently kept in abeyance, and anæmia is again the result.

3. I imagine that the deficiency of colour in the urine, and the salts obtained from it, depends upon the same cause as the pallor of the general surface, viz., deficiency of red globules and hæmatin in the blood.

4. Careful study of the deposit of lithic acid seemed to warrant the inference, that the common or lozenge-shaped crystal is derived from the perfect hexagonal form by shortening of the lateral planes

of the latter, so as to produce the form expressed in figure 4, the lateral planes being represented in the rhombic crystal by rounded angles; or, taking the quadrangle 6 as the primary geometrical figure, by cutting off the superior and inferior angles, we obtain a hexagon, possessing longer or shorter sides, according to the depth at which the angles are cut off. This method, however, only accounts for the tetrahedral and hexahedral forms; it does not explain the formation of the true rhombic crystal, which is an irregular form.

5. Hæmorrhage from various mucous surfaces forms a prominent feature of this disease. This symptom may depend partly upon the increased tension maintained in the vessels by the absolute increase of volume in the mass of the blood, and partly upon the imperfect nutrition of the walls of the capillaries from the inferior quality of the blood for histogenetic purposes.

6. The existence of lithiuria in this case was very interesting. Is it possible that any relation can exist between this symptom and the increase of white corpuscles in the blood? The white corpuscles, we know, are closely allied to fibrin in composition and character. Fibrin we know to be increased in febrile and inflammatory diseases, and to be accompanied by increased elimination of lithic acid, or lithates, by the kidneys: may we presume that the excessive development and destruction of the white corpuscles was in this case the cause of the unusual amount of lithic acid observed in the urine?

Part Second.

REVIEWS.

On the Absence, Malformation, and Duplicity of the Uterus; also, On Superfœtation and Migration of Ova. By Professor KUSSMAUL, of Heidelberg. Wurzburg, 1859.

Von dem Mangel, der Verkümmerung und Verdopplung der Gebärmutter; von der Nachempfängniss, und der Ueberwanderung des Eies. Von ADOLF KUSSMAUL, M.D., Professor in Heidelberg. Wurzburg, 1859.

[FIRST NOTICE.]

THE author of this work is one of the most promising of the younger scientific men in Germany, and is acknowledged to be one of the most distinguished ornaments of the University of Heidelberg.[1] His latest monograph, before the publication of this volume, is now in the hands of most of our readers,—thanks to the excellent

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[1] *See* Dr Mercer Adam's paper on "Heidelberg and its Professors," *Edinburgh Medical Journal*, vol. iv., Oct. 1858.

New Sydenham Society;—we allude, of course, to the admirable series of experiments and results, made by him and Tenner, to elucidate the nature and origin of epilepsy, and its allied convulsive affections.

The writer made the acquaintance of Dr Kussmaul in the summer of 1858; and he well recollects that, when he first called upon the Professor, he found him—in his pleasant little chamber overlooking the *Universitätplatz*—busily dissecting a preparation of so-called tubal pregnancy. "I am glad," said he, "that you have called when I have something curious to show you. Look at this preparation; it has always been considered as a case of extra-uterine pregnancy. It is not so; for here, mark you, is the fœtus lodged in the super-horn (*neben-horn*) of a double uterus, not in the tube, which you see is quite empty! I believe that many cases of this sort have been confounded with, and described as, tubal pregnancies; and I mean to write a book to prove this."

The projected work is now before us,—a very handsome volume of 384 pages, beautifully printed, and profusely illustrated by capital woodcuts. The subjects discussed are very curious; and the author has brought the light of his own clear intellect to bear upon the mass of information concerning them, which has hitherto lain scattered throughout the medical literature of Europe. We cannot too highly praise the manner in which he has executed his task; and those only who know something of the labour of book-making can appreciate the unwearied industry and plodding research which are evinced in every chapter. The medical profession is under deep obligations to Professor Kussmaul for having now supplied what has long been an acknowledged want in obstetrico-pathological literature—to wit, a succinct yet complete treatise on the malformations of the uterus. Our space forbids us attempting any very lengthy analysis of this valuable work; but we shall endeavour briefly to lay before the reader a few of the more important practical facts which it contains.

To understand aright the various malformations to which the uterus is liable, we require first to be acquainted with the mode of its development in the fœtus. The author accordingly devotes an introductory chapter to this subject, of which we need not offer an abstract, inasmuch as it contains nothing with which the physiological works of Carpenter and others have not long made us familiar. He lays particular stress on the fact, that the upper part of the uterus is originally formed by the fusion of the Fallopian tubes, so that, at first, the organ is bifid, or two-horned, as we find it in many of the lower animals. It is always distinctly bifid at the beginning of the fourth month, but its dividing septum usually disappears in the sixth or the seventh month. If arrest of development should occur before this absorption of the septum takes place, the uterus continues to be a double organ throughout life, its cavities being separated from each other by a distinct wall. All this is clearly shown and illustrated by woodcuts from Müller, Rathke, Thiersch, and other embryologists.

Having discussed these rudimentary details, Dr Kussmaul gives his division of uterine malformations, which he ranges under the following eight groups.

First, The uterus may be altogether absent, or so arrested in its development in the earlier months of fœtal life, that only some traces of the organ are visible. In the latter cases we may find only a mass of areolar tissue and muscular fibres, to which the outstretched rudimentary horns have given the shape of the letter Y. Any single part of the uterus may suffer this blight, while the remaining portion becomes single or double, as the case may be. The uterus may be affected vertically or transversely: thus, we may find horns existing without a body attached to them, or we may have development arrested in the cervical portion alone (probably occurring in the fourth or fifth month of fœtal life), so that the organ resembles the form of the uterus in the tardigrade animals. One of the two primordial divisions of the early fœtal womb may become fully developed, while the other is stunted in its growth; and in this manner arise the varieties of the one-horned womb,—the *uterus unicornis cum rudimento alterius*.

In the *second* group, the author ranges all those cases where there is complete or partial duplicity of the uterus,—that is to say, where both of the primordial canals have undergone simultaneous and equal development, so that the uterus, though containing two cavities, is not larger than the normal single organ. In these cases, the vagina may either be single or double. Such duplex uteri are commonly seen of the following three kinds:—*a*. Those in which the two divisions are quite distinct, and are completely separated from each other throughout their whole extent. The two halves may lie so far apart, that folds of the intestines may be seen interposed between them. This form (*Uterus duplex separatus vel biuteralis*) is the type of the organ in the Monotremata and Marsupiala. *b*. The separation exists only at the upper part, and the uteri are joined together by a common cervix, while they are divided from each other below by a common septum, which may or may not extend further down to produce duplicity of the vagina. This (*Ut. duplex infraconjunctus*) is the type of the Ruminantia, Pachydermata, and of most of the Rodentia. *c*. The uteri are nowhere completely separated from each other, and are united together throughout their whole extent; but their cavities are divided from each other by a longitudinal septum. This variety constitutes the *Uterus bilocularis* of Rokitansky, or the Uterus septus of Kussmaul. Other modifications of the double uterus are described and figured by the author,—such as those in which the dividing septum is imperfect in thickness or extent, etc. To these we have no time to allude. Suffice it to say, that in all these forms of the duplex womb, the external form of the organ scarcely differs from that of the single uterus, except in being somewhat shorter and broader. These malformations probably date from as early as the second month of gestation.

Thirdly, Kussmaul classes together these malformations which occur towards the end of fœtal life, or between that period and puberty, constituting the forms of the so-called *Uterus fœtalis* and *infantilis.* Thus the uterus may retain in womanhood all the peculiarities of form, size, and shape which characterized it in infancy.

Fourthly, The cavity of the organ may be wholly or partially obliterated, constituting *atresia uteri totalis* and *partialis.* This condition is generally associated with more or less complete atresia of the vagina; in some cases, a rounded fibrous cord is found in the place of the canal.

Fifthly, There may be obliquity of the uterus from irregular development of the organ, or, more frequently, from the adhesions and thickenings occasioned by fœtal peritonitis.

Sixthly, Malposition of the uterus.

Seventhly, Fusion of the uterus with the neighbouring organs, as with the bladder or bowels.

Eighthly, Cases of precocious and premature development of the organ. He quotes a case from *Hufeland's Journal*, where a child, 3½ years old, had the vulva copiously covered with hair, and the uterus was changed into a steatomatous mass, weighing four pounds. He also alludes to Dr Campbell's case, in which a child, with preternatural development of the genitals, had catamenia from birth until the time of its death, when four years old.[1]

The third chapter of the work before us is devoted to the consideration of total absence of the uterus in woman. The diagnosis of this condition in the living subject is always doubtful, if not altogether impossible. Absence of the vagina is no certain sign; for the internal organs are often fully developed when the external are malformed or wanting. Explorations have been made by the rectum and vagina, and by sounds in the bladder; but the results are not trustworthy. In fact, it is not so easy a matter to discover this condition even after death, inasmuch as it may be confounded with hermaphroditism. Steglehner gives a case of a slender delicate girl, æt. 23, who died of consumption: the vulva was not hairy; the nymphæ and clitoris were small; and he was unable to discover either uterus, tubes, or ovaries. He thought he had got a case of "virgo sine utero" to place on record; for the female sex of the person seemed clearly established by the appearance of the external parts, and by the fact of menstruation having occurred with tolerable regularity. But he saw something like a vas deferens on the left side, and, on tracing it narrowly, he found a testis and its appendages concealed among the soft parts. In fact, the individual was a hermaphrodite.[1] Again, the rudimentary horns of the uterus may be mistaken for the ovaries and Fallopian tubes. To show the difficulties of the question, it is stated that the eminent obstetrician Kiwisch, in a case which he described as one of absent uterus, fell into the error of mistaking a rudimentary uterus for the vagina.

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[1] *Midwifery.* Edinburgh, 1833. P. 46.

Many of the reputed cases of absent uterus recorded in medical literature, appear to have been instances of the rudimentary conditions of the organ. Kussmaul says, that the place of insertion of the round ligament, serves to distinguish a rudimentary horn of the uterus from the ovaries or Fallopian tubes. Absence of the uterus does not necessarily occasion want of the ovaries and their tubal appendages; and in cases where the ovaries are present, Graafian vesicles may be enclosed within them, and become regularly developed. Where the ovaries are wanting, along with the uterus, the individual may be truly said to be *sexless*. In all undoubted cases of absent uterus which are upon record, the vagina has been absent, or has been a mere blind, short *cul-de-sac*. Where the internal generative organs are wanting, the external parts may be normally developed, although occasionally they are malformed. The mammæ may be well formed, and the pelvis of the usual feminine dimensions; while the general contour of the figure, the tone of the voice, and the habits of life, may be the same as those of other women. Individuals thus affected may live to an old age, in the enjoyment of perfect health. Menstruation, and even the *molimina menstrualia*, are expressly stated to be absent by most observers, even in those cases where the ovaries containing Graafian vesicles have been present. In Dr Quain's[2] case, there was periodical epistaxis, as a sort of vicarious menstruation.

In the next chapter, our author treats of those malformations which arise from stunted growth and irregular development of the uterus, in its long axis, occurring during the first four or five months of fœtal life. In the lowest forms, the uterus is simply found as a fleshy membranous mass, which may be of a rounded, arched, or flat shape, enclosing no cavity within itself, and having horns and round ligaments attached to it. But the most common variety of such malformations is that of the *Uterus bipartitus* (of Mayer of Bonn and Rokitansky), where an outline of the organ is found as a flattened band of cellular tissue, intermixed with muscular fibres, lying between the bladder and rectum. There may be a small cavity within the mass, and also in each of its cornua. In cases of this sort, the external parts may be found natural; but they are often malformed, and the vagina is merely a *cul-de-sac*, admitting only the finger-point. Mr Braid's case, published in this Journal,[3] is quoted as an excellent illustration of this form of the undeveloped uterus.

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[1] Steglehner, *De hermaphroditorum natura*. Leipzig, 1817.

[2] *Trans. of Path. Soc. of London*, vol. vii., 1856.

[3] *Edin. Monthly Journal*, March 1853.

In many of the cases in which such defective conditions of the parts have been observed, the women have been married happily for many years. In most of these instances, however, *coitus* has either been performed imperfectly or not at all. But Lisfranc, Dupuytren, Kiwisch, and other authors, record cases in which narrow and exceedingly short *vaginæ* have become sufficiently dilated after marriage to admit of perfect connubial intercourse. Kussmaul shows, that in very many of such malformed women, the urethra has been made a substitute for the vagina *in coitu.*[1]

The abnormalities of the organ arising from arrested development during the latter half of pregnancy, are next fully discussed. The most common form is that of the infantile uterus, in which the womb retains in womanhood, the size, shape, etc., of the organ of a little child. In these cases the walls are very thin, and the length of the cervix is greater than that of the body. The uterine appendages and ovaries, as well as the external parts, are usually ill developed. The *Uterus infantilis* may be either a single or a double organ; it may be imperforate from atresia; or it may have a peculiar shape like that of an anvil (*Ut. incudiformis* vel *biangularis*).

Some remarks may be interesting on the physical diagnosis of all those forms of uterine malformation which we have alluded to.

a. Where the vagina is absent, or exists merely as a short *cul-*

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[1] Portal, Louis, Vicq d'Azyr, and other authorities, are quoted in illustration; and the following very amusing anecdote is given from Latour, in the *Dict. des Sciences Med.*, vol. xxiv.:—"Un paysan des environs d'Orléans, ayant mal interprété une expression métaphorique échappée au directeur de sa conscience, et attribuant à ce qu'il n'était pas dans la bonne voie la stérilité de son mariage, fut assez simple pour substituer l'urétre au vagin. Les commencements furent pénibles; mais à l'aide d'une dilatation progressive opérée par divers moyens mécaniques, il parvint à son but et resta encore quelque temps dans l'erreur, jusqu'à ce qu'une incontinence d'urine et d'autres accidens eussent forcé la femme d'avoir recours aux soins d'un médecin." Impregnation has even occurred *per rectum* in such cases. The famous surgeon Louis records such an instance:—"Une jeune fille avait les organes de la génération cachés par une imperforation, qui ne laissait apercevoir aucune apparence de prélude et d'introduction. Cette femme fut reglée par l'anus; son amant, devenu très pressant, lui arracha l'aveu de l'outrage, que lui avait fait la nature, en la privant de l'organe des plaisirs les plus doux: dans le délire de sa passion, il supplia son amante de consentir à ce qu'il s'unit à elle par la seule voie qui fut praticable; quelle femme peut résister aux brûlantes prières de l'amant adoré? elle souscrivit à tout, et bientôt elle devint mère. L'accouchement à terme, d'un enfant bien conformé, eut lieu par l'anus. *Louis* rapporte ce cas dans une thèse qui a pour titre: De partium externarum generationi inservientium in mulieribus naturali vitiosa et morbosa dispositione, etc. Le Parlement rendit un arrêt par lequel il defendait de soutenir cette thèse. *Louis* fut interdit, persécuté par la Sorbonne, à cause de cette question, qu'il adressait aux casuistes: In uxore, sic disposita, uti fas sit, vel non, judicent theologi morales? Le grand pontife, qui gouvernait l'église, le même qui avait protégé *Voltaire*, et s'était honoré en acceptant la dédicace de son *Mahomet*, le Pape, plus philosophe que le Parlament et que la Sorbonne, donna l'absolution à Louis, dont la thèse fut imprimée en 1754."

de-sac, at the termination of which no trace of a uterus can be felt. In such cases, no womb-like body may be felt between the bowel and the bladder; and, by means of the finger within the rectum, we may be able to trace a catheter introduced into the bladder, along its whole course from the urethra to the bladder, as distinctly as though only the walls of the organ were between the instrument and the finger. Menstruation may be absent, or may occur in a vicarious form. All these signs indicate either, 1st, total absence of the uterus; 2d, *Uterus bipartitus;* or, 3d, a small, hollow womb, with thin walls, having no cervical portion. If, however, a mass interposes itself between the finger and the catheter, it may indicate the presence of the fœtal or infantile uterus.

b. Where, at the termination of a longer or shorter vagina, the cervical portion of a uterus can be felt. This may be either a mere rudimentary cervix, or there may be an os capable of admitting a longer or shorter uterine sound, indicating perhaps a two-horned uterus, with defective development of the neck.

c. In some cases of absent uterus, the vagina may be longer than usual,—in fact, so deep, that the finger cannot reach its fundus, or detect any trace of a uterus.

After a few remarks on the *Uterus duplex separatus*, or form of duplex womb in which the two halves lie so completely apart from each other that a knuckle of intestine may become interposed between them,—our author passes on to the consideration of the unicorn uterus, with and without a second stunted horn attached to it. By the term *Uterus unicornis* (Rokitansky), we understand a womb in which one of the primordial divisions has become more or less completely developed, while the other half has been arrested in its growth. It usually is of a conical or cylindrical shape; it is much longer than it is broad; and it always lies obliquely in the pelvis, being directed towards the side whence it springs. Its obliquity is determined by the presence of a rudimentary horn attached to it; and the general rule is, that the higher the point at which this horn arises from the more developed portion of the uterus, the less is the deviation from the middle line. On account of this obliquity, the unicorn uterus always presents a concave, and a convex side,—and the rudimentary horn is found attached to the latter. The body of the uterus, or rather its developed horn, tapers upwards to a very fine point, at which it becomes joined to the rudimentary horn; and from this point there arise *one* Fallopian tube, *one* ovarian ligament with *one* ovary attached to it, and *one* round ligament. The "super-horn," or stunted half of the uterus, varies in the degree of its development. It may exist only as a thin, narrow, fibrous band, or as a rounded muscular cord stretching upwards and outwards, which may be either imperforate or possessing a cavity, and prolonged into a Fallopian tube. The cavity or canal of the rudimentary horn generally opens into the lower or cervical portion of the developed horn; but the point of insertion may be considerably higher. If one of the older observers can be trusted,[1] it has been seen opening into the vagina, near the cervix of the other half of the uterus. The unicorn uterus may either occur as an independent malformation, or it may co-exist with deformed conditions of the urinary organs and other parts of the body.

There are few subjects in obstetric literature more curious than that of pregnancy in the unicorn uterus. This topic is very fully discussed by Kussmaul. He devotes several chapters to its consideration, which are profusely illustrated with wood-cuts, and certain abstracts of all the more remarkable instances of such pregnancies on record. Patient research and indefatigable industry—those characteristics of German *litterateurs*—are evident in this as in all the other parts of this valuable work. We would refer those of our readers who are interested in obstetricy to the original volume, where they will find a more complete treatise on the subject than exists elsewhere in medical literature. It is impossible, of course, for us to attempt more than to give the reader a rough sketch of a few of the more remarkable circumstances connected with such cases.

The unicorn womb—whether with or without an attached rudimentary horn—is prone to become impregnated; but the most remarkable fact to be remembered is, that a fœtus may be developed within the said rudimentary horn. Ignorance or forgetfulness of this fact has often led observers into errors; and Kussmaul expresses his firm belief, from extensive examination of the matter, that a very large proportion of the cases which have been described in medical literature as tubular pregnancies, have been nothing more than mistaken instances of pregnancy occurring in the "super-horn" of a unicorn uterus. He quotes a case from Dionis, one of the old French physicians, of a young lady, æt. 20, who died suddenly from rupture of the gravid rudimentary horn. Dionis made a *post-mortem* at the desire of Maria Theresa, the Queen of Louis XIV.; and, singular to say, the curiosity of his royal mistress was so much excited on hearing the account of the case, that he says:—"Tam curiosa autem ipsa fuit Regina, ut satis diu consideraret istum uterum. Post meridiem Reginæ nomine mihi mandatum fuit, ut uterum istum denuo ipse adferrem." A fœtus has been known to be retained within a rudimentary horn for upwards of thirty years, as occurred in a remarkable case related by Fritze, and quoted by Kussmaul. A girl, convicted of some serious crime, on being condemned to imprisonment for life in the gaol of Strasbourg, maintained that she was pregnant. Severe vomiting and general illness seemed to confirm her statement; so she was sent to a civil hospital for treatment, where she remained three months. At the end of that time she was pronounced by the physicians not to be *enceinte*, and she was taken back to prison; but her illness returned at intervals, she had bad health, and suffered from feeble digestion for upwards of thirty years. At length she died, after an illness of four months, which began by stabbing pains in the lower part of the body, followed by wasting fever and great emaciation. At the autopsy, a tumour, three inches in diameter, was found in the middle of the left Fallopian tube, containing a small fœtus. This was found to be an instance of pregnancy within a rudimentary horn of the uterus. This very curious case is rendered more interesting by the circumstance of rupture of the stunted horn not having taken place. The child had died in the fifth month, and become mummified; and the walls of the *quasi*-uterus, as well as the membranes, had been changed into a hard and tough envelope, which was partially ossified.

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[1] Canestrini, *Historia de utero duplici, alterutro quarto graviditatis mense rupto, in Hungaria*, A.D. 1781, *in cadavere ab auctore invento.* Augustæ Vindelic. 1788.

Many cases are cited at great length to show how pregnancy of a rudimentary horn has been mistaken for extra-uterine pregnancy within the tubes. Upon these we cannot enter.

In most cases of unicorn uterus, menstruation is normally present; and this malformation of the womb offers no impediment to impregnation. In fact, pregnancy may even occur in the stunted rudimentary horn in cases where there is no canal of communication between it and the other fully developed half of the uterus.[1]

To explain this curious circumstance, we must suppose that there has been originally a canal of communication in existence, by which the spermatozoa found their way into the rudimentary horn, where they impregnated an ovum discharged from the ovary attached to the said super-horn. The passage has probably become subsequently obliterated in consequence of a decidua-like swelling of the mucous membrane lining the canal, as has actually been observed by Rokitansky. There is no predisposition to abortion when pregnancy occurs in the developed half of the unicorn uterus; but when it takes place within the rudimentary horn, the termination is never favourable. In such cases there is almost invariably a rupture of the sac, whereby the fœtus is expelled into the abdominal cavity, causing the death of the mother. The case of Fritze, to which we have alluded, was a rare exception to this rule. Rupture of the horn usually takes place at the extremity of the horn, where the tube is attached to it, as at this point the walls of the sac are thinnest. When the super-horn becomes gravid, there is always simultaneous enlargement of the developed portion of the uterus, —its walls become thickened, a decidua lines its inner surface, and its os becomes closed by a mucous plug.

The process of parturition or pregnancy of the unicorn uterus presents no special difficulties; and such mothers often have large families, with very easy labours.

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[1] Czihak, *Inaug. Dissert.*, "De graviditate extra-uterina." Heidelberg, 1824. Ingleby, Extra-uterine Pregnancy. *Edin. Med. and Surg. Jour.*, vol. xlii., 1834, p. 350.

Our author next notices those forms of duplex uterus in which neither of the divisions is at all stunted in its development. Now these duplex uteri are of two kinds:—*first*, those in which there are two distinct horns (*Uteri bicornes*); and, *second*, those which are single outwardly, and are merely divided internally by a median wall or septum (*Uteri septi vel biloculares*, Rokitansky). In both varieties, the duplicity may be either partial or complete. In the *Ut. bicornis* the two horns are united, to a greater or less extent. The vagina in such cases may be single or double. Duplicity of the vagina may be complete, or exist only to a limited extent; and this condition has been known to occur without the presence of a double uterus. In the virgin state, the two-horned uterus is considerably broader than it is long. Menstruation may occur quite normally in these forms of double uterus, the catamenia flowing from one or both of the cavities.

A most elaborate array of cases is given, illustrative of pregnancy in the perfectly developed duplex uterus, which have been collected from authors in every language. Many curious particulars are given. Among others occurs the following anecdote, related by Baldinger, an old German physician:[1]—"One of our most celebrated accoucheurs met with a remarkable case in a woman who had a duplex uterus and a double vagina. She asked him whether she might become married; and he gave her the advice, that if she did so, she should only make use of one of her vaginæ. In course of time she was brought to bed of a child. *Sed quid fit?* After three months she again fell in labour, showing clearly that she had twice conceived, at different times." "Truly a most remarkable case!" adds old Baldinger. Lobstein[2] states, that he "delivered a woman of two infants, one a month after the other; and was able to convince himself that she had two uteri, and to each a distinct vagina."

In cases of parturition with such duplex uteri, labour may occasionally be quite natural; but generally it is the contrary. The malformation of the womb and of the vagina, as well as the abnormal shape, size, and axis of the uterus, may be assigned as causes which render parturition difficult and perilous. Many of the women who have borne children under such circumstances have died during the puerperal stage.

Here for the present we must pause, for the space allotted to us has already been exceeded. We have finished all that we have to say concerning the malformations, etc., of the uterus; but next month we propose to return to this interesting work, and lay before our readers some account of its remaining divisions, which treat of the important subjects of Super-Fœtation and the Migration of Ova.

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[1] Baldinger, *Neues Magazin*, Bd. vi., 1784.

[2] Quoted by Campbell. *Midwifery*. Edinburgh, 1833.

Hæmorrhoids and Prolapsus of the Rectum—their Pathology and Treatment. By HENRY SMITH, F.R.C.S. London, 1860.

FEW surgeons have, in the same time, contributed so much useful literature to surgery as Mr Smith; and we are glad to find that the little book which he has now cast upon the waters of publicity, is one which will be found still useful after many days.

Mr Smith begins with a sketch of the scene of his exploits, with descriptions of external and internal hæmorrhoids, evidently not so much with the idea of such being necessary for his reader's instruction, as that the latter should start from the same point with the author in these days of confusion in terms and cellular chaosity. In operating on external piles, an Edinburgh eye is caught by our author's preferring cold to chloroform as an anæsthetic. He cites one case as wonderful as horrible:—

"A lady in the prime of life, and suffering from external hæmorrhoids, was induced to put herself under the care of a physician-accoucheur in London, who, without hesitation, undertook to perform the necessary surgical operation upon her in April. The cicatrization arising from the wounds made was such that, in June, *complete obstruction* of the bowels occurred, and her life was placed in great danger,—the orifice of the anus being then *nearly closed*." When this poor martyr to avaricious ignorance consulted Mr Smith, he found "the orifice almost obliterated by a dense unyielding stricture, which extended about an inch up the gut." He recommended an operation; but so broken was her spirit, that she would submit to no more cutting.

The special object of this well-written and honest little volume, is to show that, in some cases of internal piles, one or two judicious applications of nitric acid are sufficient to effect a cure. The author warns us against cutting the mucous membrane, and against tying external piles. It is extraordinary how many surgeons still persevere in ligaturing the latter. We lately had to take a considerable journey to relieve a patient from the agony produced by such treatment. Mr Smith does not by any means disparage the ligature: for "it is necessary," he says, "in those cases where the hæmorrhoidal tumours (internal) are large, well defined, and prominent, and where they present a dark blue appearance, as though they consist of venous ramifications." "There are, however, other instances where the hæmorrhoidal tumours are small or moderate in size, and where they are evidently composed of morbid texture, in which the small arteries rather than the veins are interested, as shown by their bright florid aspect, and their tendency to pour out arterial blood whenever the patient is at the closet, or when the tumours are handled." . . . "Now, in such cases, the ligature will undoubtedly be as effective as in the other instances before described; but this proceeding is not necessary, as the local use of the nitric acid is so eminently suited to them."

The acid Mr Smith uses is the colourless or the brown fuming acid. He applies it lightly with a glass rod, or brush, or bit of wood, having first carefully wiped the mucus from the surface of the piles. The application merely, in the majority of instances, produces a slight warmth, which goes off very speedily.

We have scarcely quoted enough to show Mr Smith's views on the subject, but do not intend to transcribe more of a three shilling book, so well worth the money that every surgeon should obtain a copy.

The Nature and Treatment of Gout and Rheumatic Gout. By ALFRED BARING GARROD, M.D., F.R.S., Physician to University College Hospital, etc., etc, London, 1859. Pp. 601.

THAT gout depends upon, or is in some way or other closely connected with, the accumulation in the blood of those morbid matters which are found to form the gouty concretions in the joints, is a very ancient piece of medical philosophy; and since modern research has traced out the relations of gout and calculus, detecting by chemical analysis the presence of a common element in the articular and urinary deposits, this humoral pathology of gout has become, not unnaturally, the prevalent view of the nature of that much-debated disease. Perhaps the clearest statement to be found anywhere of the modern humoral pathology of gout, is in the well-known essay of Sir Henry Holland, which points so decidedly, and on grounds so clearly and, at the same time, so cautiously stated, to uric acid as the *materies morbi* of gout, that Dr Garrod, in adopting a similar theory of the disease, seems to have merely expanded and followed out into detail the argument of his predecessor. The claims which the very able and interesting book now before us might have to originality of idea are thus considerably narrowed—not, indeed, as compared with any actual claim made by the author (who has most honourably acknowledged the sources of his inspiration), but as compared with what might have been ascribed, *primâ facie*, to the discoverer of uric acid in the blood of the gouty. It is in working out this theme by multitudes of analyses that Dr Garrod has excelled all previous champions of the uric acid hypothesis. That hypothesis certainly assumes, when viewed in the light of his inquiry, a more definite and trustworthy aspect than heretofore. And in bringing the work of the laboratory to bear, with great patience and success, upon the working out of this single problem—to trace the relations between gout and uric acid—Dr Garrod has unquestionably added, in no common degree, to our pathological knowledge of this most perplexing and singular disease.

The papers submitted by the author at different times to the

Medical and Chirurgical Society of London contain the substance of what is novel in the present work; but the medical reader will be by no means dissatisfied to have the results of so much really excellent research placed before him in a more accessible and convenient form than they are to be found in the Transactions of that learned body. The volume in which these memoirs are here collected is a portly one of over 600 pages, profusely and excellently illustrated with wood-blocks and coloured lithographic drawings. It has evidently been produced at great expense, and, though rather dear for our northern purses, is by no means dearer than the nature of its contents clearly justifies. In all this the author is much to be praised, and we praise him accordingly: he has made a large venture in medical literature, upon no slight or insufficient grounds; and we heartily wish it may prove a successful one, both in a commercial and in a higher sense. Nowhere that we know of, indeed,—not even in Dr Adams' splendid work,—is there to be found so good a collection of graphic illustrations of crippled arms, legs, kidneys, and *ears* (for this last is a new phase of the gouty deposit particularly described by Dr Garrod), as in the work before us. It is, indeed, a book that could only have been produced by an hospital physician; and we truly believe that in no city in the world, except London, could the materials for such a work have been accumulated in any number of hospitals. Thanks to the luxury, wealth, and ostentation of the great metropolis, Dr Garrod has found a field of hospital study hitherto unparalleled; he has used it in a way which we most heartily applaud, and which will advance his well-earned reputation as a chemical pathologist.

And now we must temper our favourable criticism with a word of censure. We fear that Dr Garrod, with all his eminently scientific and distinguished antecedents, with all his real love of his subject, with less, therefore, than the usual temptation to *book-making*, in the equivocal sense of the term, cannot be altogether absolved from that deadly sin of modern medical, and especially of metropolitan, authorship. Had he simply republished, in a connected form, his original researches, there would have been no ground for this criticism. But then it would not have been a "practical" work, fitted for the London market, and conformable to the standard of completeness exacted by that form of public opinion which is cultivated in and around Messrs Walton and Maberly's. Dr Garrod was really "well up" in uric acid, in crystals and tests, in laboratory work of all kinds, in drugs and their physiological action on the secretions, in material and accurately demonstrable results of modern research, in short. But a Fellow of the Royal College of Physicians, writing a practical work for the general practitioner, felt, not unnaturally, bound to show some considerable acquaintance with the medical and general literature of his subject, and to speak *ex cathedrâ* on all matters concerning it, as from old and familiar knowledge. And hereupon ensued a dilemma. Either, on the one hand, an incomplete book; or, on the other, a course of "reading up" for the occasion. Dr Garrod chose the latter alternative; and hence we have the amazing display of ill-digested learning in Chapter I., and the very common-place *réchauffé* of symptoms in Chapter II. We venture to put it to Dr Garrod's better judgment, whether the intolerable rubbish of Lucian's Ocypus deserved to be so profusely quoted in bad Latin and very vulgar English, from the Edinburgh translation of *Van Swieten's Commentaries?* We feel perfectly assured that he would at once acknowledge that, up to the date of his writing Chapter I., he was little versed in Lucian; that, in fact, he was, and possibly still is, ignorant of the meaning and etymology of the Lucianic word Τραγοποδάγρα, which he everywhere, and often, in utter defiance of such modicum of sense as the word contains, spells *Tragapodagra;* as well as of the more ordinary word οἴδημα, which is throughout the book mutilated into the utterly indefensible form of *edema.* A real scholar, desirous to instruct the unlearned, would hardly have put us off with the very questionable old Latin rendering of the long list of queer ancient remedies referred to in p. 26; still less would he have said that the passage "needs no English translation," seeing that it not only stands greatly in need of a tolerable translation, but can hardly be made thoroughly intelligible without something like a commentary. If the object was merely to give an idea of the general effect of the passage, a tolerable counterpart to Lucian's picture of Greek polypharmacy might have been found in Robert Burns' "Death and Dr Hornbook,"* which would have conveyed quite as good a notion of the kind of practice alluded to as the half-page of Latin names here jumbled together to look like a rendering of Lucian. Nor would any one who had read the two burlesques with appreciation of their respective merits have neglected the best parts of the Tragopodagra, which are tolerably good, to give us nearly the stupidest portions of the Ocypus, of which Erasmus said truly, that it contains, from beginning to end, not a trace of Lucian's humour and wit.

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* "A' kind o' boxes, mugs, and bottles
He's sure to ha'e;
Their Latin names as fast he rattles
As A, B, C.

"Calces o' fossils, earths, and trees;
True sal-marinum of the seas;
The farina of beans and peas,
He has't in plenty;
Aquafontis, what you please,
He can content ye.

"Forbye some new, uncommon weapons,—
Urinus spiritus of capons;
Or mite-horn shavings, filings, scrapings,
Distilled *per se;*
Sal-alkali o' midge-tail clippings,
And mony mae."

We are unwilling to dwell upon these, perhaps not very important, blemishes. They only indicate to our critical sense that Dr Garrod should either have avoided parading his knowledge of ancient literature, or should have taken care to have possessed himself more completely of its spirit as well as its details. Chapter I., we beg to assure him, is very dry, not very accurate, and not at all very profitable reading.

Chapter II., containing a description of acute gout,is likewise barren of novelty either in matter or manner. It contains a rather diffuse, and by no means very striking description of the gouty paroxysm, and adduces several cases at length to prove the very original doctrine, that gout may attack either the hand or the foot, and that it in some respects resembles rheumatism.

Chapter III., on chronic gout, opens with a quotation in English from Heberden, to the rather startling effect, that "it can hardly be reckoned one of the disadvantages of gout, that, after destroying all the comforts of living, by this weight of misery, or by bringing on a palsy or apoplexy, it immaturely extinguishes the powers of life." If Heberden had ever written in this slipshod style, he never would have been a classic. The original is as follows, and is, as usual, a model of terse, clear, and idiomatic expression :—"Inter podagræ mala vix debet recenseri, quod omnibus vitæ solatiis corruptis, viribusque vel sensim perditis, vel incidente paralysi aut apoplexiâ subito deletis, immaturam mortem inferat." To misconstrue and obscure the sense of Heberden in such a truly fine passage as this, was surely unworthy of an author who gives us, in Chapter I., the "views of Hippocrates, Celsus, Galen, Aretæus, Cælius Aurelianus, Alexander Trallianus, and Demetrius Pepagomenos.

This inauspicious commencement, however, leads to a decidedly better chapter than the former. When fairly emancipated from the description of symptoms, for which he has apparently no original gift of observation, and plunged into the discussion of tophaceous deposits, the chemical physician is, for the first time, thoroughly in his element. From the close of this chapter to Chapter VII. we read with an increasing interest, and with a genuine conviction of the author's familiarity with his subject. We shall endeavour to give shortly some idea of the results arrived at.

The following remarks on the great frequency of gouty deposits in the helix of the ears are of considerable interest, and constitute a really original contribution to the symptomatology of the disease.

> "In thirty-seven gouty patients who were examined to ascertain the presence or absence of concretions of urate of soda upon the surface, or in such situations as to be undoubtedly recognised, it was noted, that they were present in seventeen cases, absent in twenty; and in the above seventeen, they occurred in the ears alone in seven cases, in the ears and around the joints in nine, and in one

case only could they be recognised in other parts of the body, without being present in the ears also.

"In the ears they vary much both in numbers and size: sometimes only one exists, at others as many as eight or ten; in size they occasionally equal a split pea, often they are not larger than a pin's head, and now and then even much less, a mere point only. They have the appearance of little pearls, and are generally situated about the fold of the helix; sometimes they possess a gritty hardness, but often are soft, and when punctured give exit to a milky or cream-like fluid. Further examination shows that when hardened they become firmly attached to the cartilage of the ear, and enlarged blood-vessels are often seen in their neighbourhood, and extending some distance from them."—Pp. 75, 76.

Page 70 contains a good figure of the microscopic appearances of the cream-like fluid obtained by puncturing a recently-formed urate of soda deposit. The rest of this chapter contains nothing requiring remark.

Chapter IV. takes up the important subject of the blood in gout,—one which Dr Garrod may be said to have made his own by original contributions of great value. It was scarcely necessary, indeed, in writing for the medical profession, to begin this chapter with a description of the most ordinary physical characters of the blood; nor was it necessary to give all the ascertained facts, including even the most elementary, relating to the chemical composition of this important fluid, in order to arrive at the simple statement, that the blood contains, in gout, an excess of uric acid. With these exceptions, however, everything in this chapter is full of instruction, and is in the best spirit of modern research. It follows, from a long series of careful and elaborate investigations, that in 47 cases in which a decided excess of uric acid was found in the blood serum, all those of which the particulars were fully known, were either recognised as cases of gout at the time of examination, or were persons having decided traces of the disease in their previous history. As these experiments were not the whole of those made by the author, the value of the result, numerically considered, has to be viewed in the light of another statement, that since his first paper at the Medico-Chirurgical Society in 1848, he has "been in the habit of examining the blood in this disease (gout) *now in at least a hundred cases*;" and that, having regard to the known fact that traces of uric acid are to be found in healthy blood, he believes that in all of these cases of gout this substance existed "in abnormal quantities." The method of analysis is very carefully described. It is not quite so exact as we should like, but is probably as exact as the case admits of; and we think the whole inquiry leaves no reasonable doubt of the accuracy of Dr Garrod's conclusion, that uric acid in the blood is actually increased in gout,—the quantity appearing to vary from 0·025 to 0·175 grs. in 1000 grs. of the serum, *not making allowance for the loss* which Dr Garrod finds always takes place by decomposition and other causes.

The "uric acid thread experiment," which brings the analysis within easy reach of the ordinary practitioner, is important; but to do justice to the author's inquiry would occupy too much of our space; so we give merely the description of the process:—

> "Take from one to two fluid-drachms of the serum of blood, and put it into a flattened glass dish or capsule; those I prefer are about three inches in diameter, and one-third of an inch in depth, which can be readily procured at any glass-house; to this add ordinary strong acetic acid, in the proportion of six minims to each fluid-drachm of serum, which usually causes the evolution of a few bubbles of gas. When the fluids are well mixed, introduce a very fine thread, consisting of from one to three ultimate fibres, about an inch in length, from a piece of unwashed huckaback or other linen fabric, which should be depressed by means of a small rod, as a probe or point of a pencil. The glass should then be put aside in a moderately warm place, until the serum is quite set and almost dry; the mantel-piece in a room of the ordinary temperature, or a book-case, answers very well, the time varying from twenty-four to forty-eight hours, depending on the warmth and dryness of the atmosphere."—P. 110.

Whenever uric acid crystallizes on the thread, it is, according to the author, present in not less than 0·025 grains in 1000 grains of serum—that is, in decidedly abnormal quantity. The absence of delicacy (above a certain degree) in the test thus becomes one of its most valuable attributes.

Uric acid may also be obtained from the serum of blisters, and from the cutaneous secretions of the gouty, by means of the uric acid thread experiment.

In the Appendix, Dr Garrod gives a tabular statement of thirty-five cases of acute rheumatism in which the blood was examined for uric acid, and in which the results by the thread experiment were uniformly negative. We cannot avoid following the author through these interesting results to his conclusion, that there is probably no increase of uric acid in the system in rheumatism proper; and further, we entirely believe, with the author, that rheumatism and gout are totally distinct diseases, not often associated, or to be confounded with each other: the name "rheumatic gout" being in reality only a name for ignorance or imperfect information. In doubtful cases Dr G. proposes (and we think with good reason) to substitute the uric acid test in some degree for the imperfect means of diagnosis at present existing, and thus to introduce clearness where there is at present confusion.

We now pass to Chapter V., which contains some very interesting, and apparently very complete and satisfactory, investigations on the urinary secretion in the gouty. This chapter is almost entirely original and novel as regards its conclusions; for the observations of Sir C. Scudamore, quoted in its commencement with approval, hardly amount to more than the well-known fact, that deposits of pink or lateritious sediment are common in the urine in gout, especially during the paroxysm.

Dr Garrod has applied an exact chemical analysis to this subject in a considerable number of cases, both during the paroxysm and when the disease had assumed the chronic form; as well as in a few instances of gouty subjects when wholly free from suffering of any kind. It appears from these analyses, which embrace the inquiry into the whole quantity of uric acid passed from the system in twenty-four hours, that in no stage of the disease does this excretion exceed the normal amount; while in the beginning of the paroxysm, and in many of the chronic cases as a constant phenomenon, the secretion of uric is so much diminished as to justify the assertion, that gout is to a great extent associated with, if not dependent upon, *an impairment of the uric-acid-secreting function of the kidneys.* Dr Garrod, indeed, if we are not mistaken, very nearly adopts this lesion of the renal function, as being, in his opinion, the proximate cause of gout; and as a matter of fact, he has given evidence of its co-existence, not only with the symptoms of gout, but in most instances, also, with that excess of uric acid in the blood to which we have formerly adverted. It becomes, therefore, at least extremely probable that the check at the kidney is the cause of the accumulation in the blood.

What happens during the gouty paroxysm, according to our author, is as follows:—The excretion of uric acid receives a considerable check, and this substance, in the form of urate of soda, is retained in the blood; or, if in quantity too great for complete solution, is precipitated or otherwise separated into the joints and fibrous tissues in the form of the well-known chalk-like deposits. The formation of these morbid deposits is attended by pain, inflammation, fever: in the febrile stage of gout, as in all other cases of inflammatory fever, the urine is scanty and acid, and, owing to excess of acidity, the uric acid is either separated as a crystalline sediment, or deposited with undue frequency, on cooling, in the form of the lateritious deposit of urate of ammonia. At a more advanced stage of the paroxysm the quantity of uric acid increases very considerably as compared with the early stage, though rarely exceeding the normal quantity even temporarily; and, as the fit passes off, it usually diminishes again. "I am convinced," writes Dr Garrod, "that the cause of the prevalent idea, that there is always an excess of uric acid thrown out of the system by gouty individuals, and especially in the acute forms of the disease, is derived from the fact that, when febrile disturbance runs high, the renal secretion usually becomes scanty, its acidity is increased, and therefore almost the whole of the uric acid is rendered visible to the eye; at the same time, the tendency of uric acid to attract the colouring matters of the urine adds greatly to the appearance of this excess."—(P. 164.)

In chronic gout, the urine "is usually rather pale, below the average tint of healthy urine, of lower density, and often increased in quantity. The amount of urea, except in extreme cases, is about the same as in health (due regard being taken of the diet of the patient at the time). The uric acid is very much diminished, and subject to excretion in very varied quantities at different times. Lastly, the presence of a small amount of albumen is exceedingly frequent."

In connection with this last symptom of chronic gout, we may here allude to Dr Garrod's views on the gouty disorganization of the kidney, described by Dr Todd and others. He considers it to be nothing else than a slow atrophy, accompanied by epithelial desquamation, but determined chiefly by the interstitial deposit of urate of soda among the tubuli uriniferi. He has found this substance to be frequently present, in the form of visible streaks, chiefly among the pyramids, which show under the microscope the peculiar needle-shaped crystals, and develop to chemical re-agents the characteristic tests of the compounds of uric acid.

As regards the Morbid Anatomy of Gout, which occupies two chapters, Dr Garrod has been wonderfully successful in procuring the materials for research. In not less than twelve cases of fully developed gout, including all stages of the disease, has he been enabled to submit the appearances after death to careful examination. These opportunities have been, we venture to say, almost unique; for gout, though a great destroyer of life indirectly, is so rarely fatal during the attack, at least among hospital patients, that no one as yet, we believe, has made more than one or two casual observations on the subject. The vast experience of Morgagni, drawn to a great extent from the upper classes of society, appears to have yielded only (so far as the index enables us to discover) five dissections of gouty subjects; and among these, the state of the joints is recorded only in one (XL. 2). Cruveilhier records only one case in his own experience, and another by Fauconneau Dufresne. Sir Benjamin Brodie has recorded one case, and Mr Henry Watson another. Dr Garrod has largely added to these scanty records, and has illustrated his observations by numerous drawings of the parts affected. His observations tend, on the whole, to confirm those of Cruveilhier in by far the most important of the isolated reports alluded to above. The chalk-like matter is deposited on the surface and within the cartilages of the affected joints, and also in some instances around the sheaths of the tendons. According to Dr Garrod, it rarely or never penetrates the texture of the bones, except when they have become atrophied under the pressure of concretions formed originally in the cartilaginous or fibrous parts. It is, therefore, in the non-vascular or slightly vascular tissues exclusively that this deposit takes place. The substance of the "chalk-stones" is (as has been long known) to a large extent urate of soda, mingled, in Cruveilhier's case, with earthy salts. Dr Garrod gives us no new chemical analysis, but several microscopic drawings, illustrating the crystalline disposition of the urate of soda within the textures. The joints affected are, in general, only those which have been the seat of pain during life.

In the chapter on the Causes of Gout we have once more *crambe repetita;* and, by a rather laborious process, we are led to the usual result, that gout is a disease of the luxurious, the self-indulgent, and the indolent; not unfrequently also of those who combine great mental labour with abundant comfort and deficient bodily exertion. There are some curious remarks on the frequent coincidence, in London, of gout and lead-poisoning, which Dr Garrod ascribes to the influence exercised by lead in the system in restraining the secretion of uric acid; but we must confess that this ingenious theory appears to us to demand much more investigation before it can be admitted to the rank of a scientific truth.

In the chapter on the Nature of Gout the author develops more fully his theoretical views already mentioned above, at the expense, of course, of all the preceding theories, in so far as they are opposed to his own. Sir Henry Holland here almost alone finds favour; Cullen, Mr Murray Forbes, and Dr Gairdner are rolled in the dirt. Dr Garrod, though nowhere using strong language of condemnation, cannot be said to be a generous or appreciative critic; he sees everything too much in the light of his own theory, and has failed, apparently, to grasp the truth, that to men of real practical sagacity, chemical and mechanical hypotheses are merely the play of the fancy around the difficulties of medical philosophy, subordinated entirely to the study of disease in its everyday aspect. While we do not deny that he has something to teach his predecessors, we think he will also find, if he studies them more in a practical spirit, and less exclusively for the purpose of combating their hypotheses, that he has something considerable to learn. With Dr Garrod, unfortunately, it appears as though hypothesis were all in all. His mind is pre-occupied with uric acid; he is too clearly the physician of the laboratory, more than of the sick-bed.

In treatment, Dr Garrod is of opinion, that "the method occasionally recommended, and founded on Cullen's aphorism of trusting to patience and flannel alone in the treatment of gout, is one which must be highly deprecated." He further believes that the acute fit of the disease "is quite as controllable, and as much under the influence of remedies, as any other inflammatory affection." As regards the more chronic forms of gout, he thinks that these, too, are "greatly within the power of the physician;" and that by regulating the diet and regimen, and the employment, in the intervals of the attacks, of "some means, scarcely to be called medicinal, by which the blood is kept more free from those impurities, which by their accumulation lead to the production of the paroxysms," the disease may be led to relax its grasp upon the constitution. This is, on the whole, a tolerably cheerful view of our old friend Ovid's "Tollere nodosam," etc. etc.

In the acute attack, Dr Garrod recommends "a strict antiphlogistic diet" with abundant diluents; and we are glad to observe that he discountenances entirely the practice, now or lately too common in London, of ministering to the pampered and vicious appetite for wine and alcoholic stimulants, in a disease brought on in a great measure by their undue use, in connection with luxurious food. Dr Garrod's diet scale is extremely moderate, and would be considered by many as too rigid; but this, if an error, is wholesome error. Purgatives in great moderation, saline diuretics and diaphoretics, with moderate doses of colchicum in sthenic cases, and perhaps the abstraction of *a few ounces only* of blood, after the method of Dr Gairdner, constitute the chief details of constitutional treatment; while the chief local application is cotton wool, covered with oiled silk. Occasionally, when pain is severe, the joint may be painted over with a solution of atropin in weak spirit and water; or if the disease be disposed to linger, a blister may be applied. Leeches and evaporating lotions are not in favour with Dr Garrod. All this is very orthodox, but does not require to be dwelt upon here.

Chapter XI. is devoted to the consideration of Colchicum, of which, as a remedy in gout, Dr Garrod highly approves; though, it would appear, the uric acid theory here breaks down, inasmuch as it has been found by our author that there is no increase, but rather a diminution, of the excretion of this substance under colchicum; so that "there is no evidence that colchicum produces any of its effects upon the system by causing the kidneys to eliminate an increased quantity of uric acid," and the action of colchicum in gout is to be replaced purely on empirical grounds. This is a rude blow to a doctrine which has stood almost unquestioned for a quarter of a century; but such a statement by Dr Garrod must be acquitted of all suspicion of the wish being father to the thought.

The chief novelty in Dr Garrod's treatment of chronic gout is the use of the carbonate and bicarbonate of lithia,—a fixed alkali, discovered in 1817, and which forms a part of the mineral waters of Carlsbad, Aix-la-Chapelle, Marienbad, Kissengen, Ems, Teflitz, Bilin, Kreuznach, Vichy, etc. Lithia has "a remarkable power of imparting solubility to uric acid, the urate of this base being the most soluble of urates." It has also a much greater neutralizing power with respect to free acids in general than potash or soda—a power dependent upon the low atomic equivalent of lithia, not exceeding seven on the hydrogen scale. On these grounds, Dr Garrod considers it as having important medicinal properties in gout and other diseases. He recommends it to be used in the form of a supercarbonate or aerated lithia water, which, we observe, may now be had as a regular article of retail commerce.

Having no personal experience on this subject, we are content to place it before our readers, and to conclude with again commending Dr Garrod's book to their notice as one of the ablest contributions to chemical pathology which has recently been under our review.

Part Third.

PERISCOPE.

PRACTICE OF MEDICINE.

VACCINATION.

1. *New Experiments regarding the Origin of Cow-Pox.*

The opinion of Jenner regarding the origin of vaccinia, alternately supported and contradicted by various observations, is at present, at Toulouse, being tested by new experiments, of which Dr A. Fontan has given the following account:—

"TOULOUSE, 24*th May* 1860.

"A happy accident occasioned my passing through Toulouse at a time when a question of the highest importance was being submitted to experiment,—I mean the question of the origin of vaccinia. The following is an abstract of the principal facts:—Some weeks ago, M. Sarrans, of Rieumes, observed that several mares brought back to his establishment for the second or third time, were affected with the *grease* (*eaux-aux-jambes*). There was a sort of epidemic of the affection, for nearly a hundred horses were found to be suffering from it. The variety of grease was the pustular form.

"One of these mares was taken to Toulouse to the veterinary school, where the learned Professor M. Laffosse soon recognised the true character of the epidemic. He inoculated with some of the matter of these pustules the teat of a cow, in the presence of his assistant and numerous pupils. Soon afterwards fine pustules made their appearance on the udder of the cow. One of the most distinguished physicians of Toulouse, Dr Cayrel, the official vaccinator of Toulouse, vaccinated, with matter from the pustules of the cow, several infants who had never been vaccinated. Well characterized vaccine vesicles followed, presenting their pearly aspect, central depression, and rose-coloured areola, increasing in size from day to day without any trace of erysipelatous inflammation.

"A second cow was vaccinated with matter from the first cow, and infants were vaccinated with the matter from the second cow: the results were equally satisfactory as in the former case. At present they have arrived at the fourth vaccination from the first cow, and at the third from the second cow. I was present at this vaccination; the vesicles were very fine. One was photographed in my presence, with a tolerably satisfactory result. The vesicle presented the most characteristic appearance of vaccinia. When pricked, no purulent matter escaped, but gradually a serous fluid oozed out in great abundance, with which several infants were vaccinated.

"The new matter is very active, and succeeded in the case of a pupil of the veterinary school, vaccinated in infancy, and in whom all previous attempts at revaccination had failed. I saw a vesicle in an infant produced by the virus of this pupil, finer and more developed than three other vesicles produced by an ordinary vaccination in the same infant. (No doubt the two vaccinations were performed simultaneously.)

"Already thirty infants have been vaccinated at Toulouse. No unpleasant symptoms have manifested themselves in any case; and in all, the result has been most satisfactory.

"Dr Izarié, formerly vaccinator in Paris, considered the vesicles so good, that he had his son vaccinated this morning with virus from one of the infants.

"An official commission has been named by the Prefect to carry out these experiments. A report will be drawn up and communicated in due time."—(*L'Union Médicale*, 29th May 1860.)

2. *Attempt to procure Vaccine Matter from the Original Source—Production of true Variola.*

In the year 1836, Dr John C. Martin, then a practitioner of medicine in Attleborough, Mass., conceiving that the sometimes imperfect protection afforded by the vaccine disease arose from a deterioration in the matter used, inserted into the udder of a cow lymph taken from a pock upon the body of a man who died of variola. Subsequently, matter derived from the cow was inserted into the arm of about fifty persons. This was at the middle of October. Presently, one Babbitt, being among the first vaccinated, began to exhibit unlooked-for symptoms which alarmed his family. Physicians were summoned; and after examination and comparison of opinions, the patient was declared to have the true small-pox. Then all those who had been vaccinated from the same source inquired anxiously what was to be their fate. The vaccinations (the sequel will show that inoculation was the more proper term) had been made on successive days up to Babbitt's illness, and others soon began to be affected. The physicians in the neighbourhood again assembled, and recommended that due precautions should be taken against the spread of small-pox, as probably all who had received the virus from Martin must suffer unmodified variola. Dr M. became at once the most unpopular of men; although, as I learn from cotemporary informants, one of whom was himself a sufferer, the experiment had not been entered upon without consultation, which relieved him from undivided responsibility. Excitement and consternation prevailed, sustained by the consecutive occurrence of new cases. Business was suspended; the panic of fear magnified the danger, and no man could see where it would end. Dr M. stoutly contended that the phenomena were merely the manifestations of genuine kine-pox in its pristine force; but we have the testimony of Dr Sylvester Fuller, that the disease was variolous. Dr Fuller was an accomplished physician; had served in the army, where he had seen much small-pox; and his evidence, in concurrence with other physicians of the time, is conclusive. Two hospital houses were established, to which many of those attacked were removed. Four months elapsed before the last patient was discharged. Not all who received the virus were sick; and of those who suffered, three died.

The affair quite ruined Dr M. He went to the West, returned insane, and remained some time in a hospital. He is still living, mildly crazed, but not incapable of intelligently following some simple occupation.

The senior Dr Manchester, of Pawtucket, then in active practice, received some of the crusts from Dr Martin. They are represented to have been thinner, and differing in appearance from the normal vaccine scab, and were not used.

As the experiment of transmitting small-pox virus through the system of the cow has, at sundry times, been successfully accomplished, the question arises, What was the cause of Dr M.'s failure and mishap? The conclusion seems unavoidable, that the matter taken from the cow was not the modified virus, but identical with lymph inserted from the human subject. Doubtless it had lain in the wound unabsorbed and undigested, and after a festering process quite local, the eschars were removed, and the non-vaccine matter re-introduced in pseudo-vaccination.

"Take thou some new infection to thine eye,
And the rank poison of the old will die,"

was the philosophy of Shakspeare. Unfortunately, Dr M.'s experiment was in conflict with the injunction. The preservation of the virus unspoiled, while deposited in the cow's udder, is quite consistent with the well-known persistent character of the contagion.

Attleborough, *Feb.* 1860.

(—*Boston Medical and Surgical Journal*, 23d February 1860.)

3. *Alleged Transmission of Constitutional Syphilis by means of Vaccination.*

Dr Guzenot, in a thesis lately submitted to the Faculty of Medicine of Paris, records two cases of constitutional syphilis *transmitted by vaccination.* These observations, due to Dr Lecocq, Surgeon-Major of Marines, had already been addressed by him to the Academy of Medicine, but not having been published, are now reproduced in full:—

Observation 1. On the 4th of May 1858, a private of marines, 25 years of age, was revaccinated in accordance with the regulations of the service. Three punctures were made on each arm. The vaccine virus had been furnished by satisfactory vesicles on the arm of another soldier, who had had, three months before, an indurated chancre,—a fact which was only ascertained on subsequent inquiry. Examined eight days afterwards, the pustules were found to have aborted; one of them became inflamed a sort time afterwards, and became the seat of an ulceration which gradually assumed all the characters of an indurated chancre. It had a hard base, and the lymphatic glands in the corresponding armpit became enlarged. At a later period, constitutional symptoms manifested themselves, which left no doubt of the nature of the case.

Observation 2. On the same day (May 4), another marine, 25 years of age, was revaccinated with matter obtained from the same source as in the former case. Phenomena, precisely similar to those observed in the first case, made their appearance,—namely, abortion of the punctures, specific ulceration of one of them, glandular affections in the axilla, and, at a later period, well-marked symptoms of constitutional syphilis.—(*Gazette Hebdomadaire.*)

(With regard to the possibility of transmitting secondary syphilis by means of revaccination, we cannot do better than lay before our readers an extract from Mr Simon's valuable Report on Vaccination, submitted to the Board of Health, and presented to Parliament:—

"A few respondents (apparently on theoretical grounds) think that a vaccinator who improperly derives his lymph from an impure source, may thereby invaccinate some second and unintended specific infection. A very few even believe they have seen instances of the kind. But, generally speaking, opinion and experience declare themselves in the opposite sense, and render it in the highest degree probable that, in the isolated instances to which reference is made, there may have operated those sources of fallacy to which I have adverted. Not only the very much greater volume of statement, but a really immense weight of authority, is on the side of those experimental results which I quoted to you. Men of the largest and oldest consulting practice in the United Kingdom—men who are believed to have seen every variety of disease and accident to which the human body is liable—our leaders who have taught medicine and surgery to the mass of the profession—physicians and surgeons of our largest metropolitan and provincial hospitals in England, Scotland, and Ireland—physicians who have specially studied the diseases of infancy—surgeons who have specially studied the inoculative diseases—pathologists of distinguished insight and learning—have never in their experience 'had reason to believe or suspect' an opposite conclusion to that of M. Taupin's experiments. In the alphabetical series of opinions you will read familiar British names, dozen by dozen, standing beside assertions of this kind. You will read that equally negative in Paris has been the vast experience of Chomel and Moreau, and Rayer and Ricord, and Rostan and Velpeau; equally negative at Vienna, that of Hebra, Oppolzer, and Sigmund. Obviously, then, one at least of two conclusions is inevitable. Either it is the case that—even with reprehensible carelessness as to the source of lymph—vaccination (so long as in any sense of the word it is vaccination) cannot be the means of communicating any second infection. Or else it is the case that, in the world of vaccinators, care is almost universally taken to exclude that possibility of danger. To the public perhaps it matters little which of these conclusions is true. Analogies and experiments, as I have shown, speak almost decidedly for the former. But at least there can be no objection to superfluous precaution. And, in reading the answers written by gentlemen personally engaged in vaccination, you will be glad to observe how many of them, in referring to a possible slovenliness in this matter, speak of it as something which cannot be conceived of any decent practitioner."

To these remarks we shall merely add, that the above cases afford an illustration of the impropriety of vaccinating with the matter obtained from adults, as additional sources of danger and fallacy are thereby introduced.—(*Ed. Edinburgh Medical Journal.*)

DEATH FROM CHLOROFORM.

The *Medical Gazette* of Lisbon gives an account of a case of death from chloroform, being the first which has occurred in Portugal. The victim was a man of twenty-nine years of age, from whom were to be extracted two small cysts, situated in the upper eyelid, near the outer angle of the right eye.—*Gazeta Medica do Porto*, 1860, p. 58.

Part Fourth.

MEDICAL NEWS.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION XXXIX., 1859–60. MEETING VIII.

Wednesday, 6*th June* 1860.—BENJAMIN BELL, Esq., President of the Society, in the Chair.

I. TUBAL PREGNANCY.

Dr Sanders exhibited a preparation of tubal pregnancy, which had been sent to the Museum of the Royal College of Surgeons by the President, Dr Douglas Maclagan, with the following history of the case:—"Mrs H., æt. 38, mother of eight children, was nursing her youngest child, who was two years old. She enjoyed good health, and was florid in appearance, notwithstanding her long nursing. She came home at six o'clock to make her husband's tea, and finding in her way a bag of potatoes, containing about five or six pecks, she lifted it with her hands, and pushed it out of the way with her knee. A few minutes after, she complained of pain in the hypogastric region, and became sick and faint. The sickness increasing, her sister went for some spirits, and by the time she came back, Mrs H. had fainted: she was pale and cold, and was put to bed by her relatives. Dr Maclagan saw her about 8 P.M., and found her quite conscious, blanched, and with a barely perceptible pulse. Being otherwise urgently occupied, he prescribed some more spirits, and ordered a full opiate to be given thereafter, desiring some one else to be sent for. Dr Sidey saw her in consequence; but she never rallied, and died at 3 A.M. She had menstruated one month before, and thought that this was a menstrual period coming on."

A *post-mortem* examination was allowed, but had to be very hurriedly performed. On opening the abdomen, the pelvis was found full of coagulated blood, and about a wash-hand basonful of fluid blood was contained in the peritoneal cavity of the abdomen. The source of the hæmorrhage was traced to the right Fallopian tube, which was removed along with the right ovary and the corresponding parts of the opposite side; the uterus was unfortunately left behind.

On examining the parts removed, the right Fallopian tube was found to present, about three quarters of an inch from its uterine end, a rounded swelling or dilatation, nearly an inch in diameter, being about the size and shape of a large marble. This swelling was of a red colour, and evidently filled with blood; on its anterior surface, the coats of the Fallopian tube had ruptured, forming an irregular rent, through which the blood had escaped into the cavity of the peritoneum. On examination, there could be no doubt that the dilatation of the Fallopian tube had been the seat of an early ovum. Careful search was accordingly made for the embryo, but unsuccessfully, for the sac was found entirely filled with clot, showing that the embryo had been dislodged and carried away by the violence of the hæmorrhage. The membranes of the ovum, however, still remained, and the tufts of the chorion were quite distinct both to the naked eye and under the microscope. The rest of the Fallopian tube was more dilated than usual, but preserved its normal shape, and was quite pervious on both sides up to the point where the ovum was situated. A large corpus luteum existed in the right ovary, which was considerably enlarged; the Fallopian tube and ovary of the left side presented the natural size and appearance.

II. OPEN DUCTUS ARTERIOSUS.

Dr Sanders showed a specimen of open ductus arteriosus, taken from a child four months old. The history of the case was of some interest. At birth the child was of full size, and well developed; at first it did not suck well, but after a week or two it took the breast greedily. It was soon noticed, however, that although the child appeared to feed well, it did not grow nor thrive, but, on the contrary, became thin, and pale, and weak; it was often restless, and could not be made to smile or to notice objects. When the infant was three months old, as this condition still continued, Dr Sanders was requested to see it. On inspection, no cause could be detected for the weakness; the appetite seemed good; there was no fever, no diarrhœa, and no constitutional taint. It was observed, however, that the child had some difficulty of breathing, and on inquiring, the mother stated that the child usually awoke during the night in a state of great agitation, apparently struggling for breath. The state of the chest was therefore carefully examined. The lungs were found to expand freely, the left one, however, not quite so fully as the right, and the respiratory sounds were normal. But on placing the hand over the precordial region, a distinct thrill was perceived, which, on the application of the stethoscope, was communicated to the ear as a loud blowing murmur, accompanying apparently the first sound of the heart. Dr Haldane afterwards examined the case along with Dr Sanders, and concurred in the opinion, that there was in all probability a persistence of the fœtal condition of the circulation. In spite of tonic and stimulating treatment, the child did not gain strength, and died on the 24th December. Dr Sanders examined the body, and removed the heart and lungs. The heart was a little enlarged; the septum of the ventricles entire, and the foramen ovale closed, so that no abnormal communication existed between the two sides of the heart. The aorta and pulmonary artery were about the normal size, and their valves healthy; but the ductus arteriosus was completely pervious, and nearly as large as the aorta where it opened into it. The blood must therefore have flowed into the descending aorta nearly equally from the ascending aorta and the pulmonary artery. It was observed during life that there was no symptom of *cyanosis*, the surface of the skin being pale, but without a blue colour,—a fact in accordance with the view which ascribes cyanosis to vascular obstruction, rather than to the mixture of oxygenated and non-oxygenated blood.

III. FRACTURES OF THE NECK OF THE HUMERUS.

Dr Patrick Heron Watson exhibited two specimens of fracture of the neck of the humerus, complicated with impaction—one *intracapsular*, the other *extracapsular*, or through the anatomical and surgical necks, as they were frequently called. The latter he showed merely by way of contrast with the former. In the intracapsular, the impaction consisted in the head of the bone being driven into the upper part of the shaft; in the extracapsular, the upper and inner part of the shaft was driven into the cancellated structure of the head. In both, complete osseous union had resulted.

Dr Watson stated, that he thought the first specimen, as being an instance of completely united intracapsular fracture along the line of the anatomical neck, would be interesting to the Society, as some surgical authorities had denied the possibility of such an injury occurring at all; while others seemed to believe, that, if it occurred, the separated portion could not retain its vitality; and others had taken it for granted, that, if fractured, and retaining its vitality, osseous union could not result. Now, although undoubtedly necrosis of the separated head did sometimes ensue (and he was acquainted with two such cases, the portion losing its vitality giving rise to suppuration, and requiring to be removed as a sequestrum), still, a more common result seemed to be impaction of the head between the tubercles of the humerus, producing a secondary fracture of the upper part of the shaft, attended with more or less comminution. Such had obviously been the case in this preparation; and *Dr Watson* begged the Society to observe, with reference to the displacement, that, while in impacted fractures of the surgical neck of the humerus, the *neck* was driven into the *head* of the bone, in impacted fractures of the anatomical neck of the humerus the *head* was driven into the *neck*, and was, therefore, the converse of what was observed in the extra and intracapsular fractures of the neck of the femur.

Dr Watson also remarked, that some recent writers upon the subject of such fractures had wished to attribute the displacement of the head of the bone into the upper part of the shaft, to the effects of chronic inflammation and interstitial absorption following the injury, and occurring gradually, and not to the direct effect of the injury itself—muscular contraction being presumed to assist in producing this gradual change, by drawing the shaft inwards and backwards against the separated head of the bone supported against the glenoid cavity. A single glance, however, at this preparation and the glenoid surface of the scapula, would, he thought, show that such was not the case in this instance; for it was obviously the displaced and altered lesser tubercle which alone had been in contact with the glenoid cavity, the opposed surfaces being grooved and polished against each other, while the head of the bone, lying completely behind and below this new articulation, was in no way connected with it.

IV. REPORT ON THE CAUSES OF DEATH AMONG THE ASSURED OF THE SCOTTISH WIDOWS' FUND LIFE ASSURANCE SOCIETY, 1853 TO 1860.

Dr Begbie read the above report, which will be found in another part of this number of the *Journal.*

Mr M'Candlish (Manager of the National Insurance Company) alluded to the value of Dr Begbie's reports, on this and former occasions, not only to the medical profession, but to all interested in the management of Life Insurance Societies.

Professor Miller considered that, in reports regarding the mortality of Insurance Societies, a difference should be made between abstainers and non-abstainers, being convinced that this would put in a clear light the advantages of total abstinence with regard to health and longevity.

DINNER TO THE MEDICAL OFFICERS OF THE CHANNEL SQUADRON.

The Channel Fleet having visited the Frith of Forth, the President and Fellows of the Royal College of Surgeons entertained the medical officers at dinner in the Hopetoun Rooms, on Tuesday, the 12th of June; the entertainment being intended as a professional and complimentary recognition by the Royal College of their brethren of the naval service. Advantage was also taken of the occasion to invite the medical officers of the staff and garrison. The chair was occupied by Dr Douglas Maclagan, President of the Royal College of Surgeons; and the croupiers were Dr Combe, Dr Andrew Wood, and Dr Simson. Among the naval and military guests were—Dr Deas, Inspector-General of Hospitals and Fleets; Drs Mackay and Maclaurin, of the "Royal Albert;" Drs Kerr and Mansfield, of the "Donegal;" Drs Layton and Watson, of the "Conqueror;" Drs Murray and Cruickshank, of the "Aboukir;" Dr Smith, of the "Centurion;" Drs West and Caldwell, of the "Mars;" Drs Bernard and Telfer, of the "Trafalgar;" Drs Hamilton and Wilson, of the "Greyhound;" Dr Davidson, of the "Algiers;" Dr Bateson, of the "Diadem;" Dr M'Bain, R.N., Naval Medical Agent; Dr Dunlop, Staff-Surgeon, R.N.; Dr Sanderson, of Musselburgh, R.N.; Dr Anderson, Surgeon-Major of the Army; Dr Anderson, 13th Light Dragoons; Dr Jee, 78th Highlanders; Dr M'Master (V.C.); Dr Shipton, 78th, etc.

Among the Fellows of the Royal College of Surgeons present were—Professor Syme, Professor Balfour, Drs Omond, Newbigging, Pagan, Handyside, Maclagan, Duncan, Dumbreck, Williamson (Leith A.V.), James Struthers, J. A. Hunter, Inglis, John Struthers, Littlejohn, Watson (E.R.V.), Menzies, Van Someran, Burn, Sibbald, and Scott; Messrs B. Bell, W. Walker, Spence, Messer, R. Maclagan, Brown, Edwards (M.L.C.A.), and Little. The following medical gentlemen were also present—namely, Dr Alexander Wood, P.R.C.P.; Dr Haldane, Dr Pattison, Dr Keiller, Mr Sanderson, Mr Craig, and Dr W. T. Gairdner.

After dinner, the CHAIRMAN having proposed the usual loyal and patriotic toasts, which were received with the utmost enthusiasm by the company, said,—I rise to propose the toast of the evening—"The Medical Service of the Navy, presided over by Sir John Liddell, and a special welcome to our guests of this evening, the Medical Officers of the Channel Fleet." (Cheers.) Gentlemen, if the cheers with which the toast of the navy is invariably received in all companies be not anything else than mere unmeaning vociferation, then there must in every assembly of our countrymen be the warmest interest attaching to the service of that department on whose fidelity and skill depend the health of our sailors, and, consequently, the efficiency of our navy. (Applause.) But when, in addition to the voice of our common country, we have the bond of a professional brotherhood, then it is that it becomes doubly satisfactory that we are able to welcome so goodly an assemblage of the medical officers of the navy as we have here to-night. (Cheers.) Gentlemen, we welcome them here, at least a great porportion of them, as licentiates of the body over which I have the honour to preside. We welcome a great number of them as fellow-students and as friends, and not a few of them as pupils. We welcome all of them as members of that profession to which it is our pride and honour to belong. (Cheers.) But while we welcome them most heartily on these grounds, we welcome them on the still higher ground of representing a department of the public service whose efficiency is not a matter of question now, but which is established by the incontrovertible argument of facts. History tells us what the state of matters was when our fleets and ships were sent to sea with little or no provision for the preservation and restoration of the health of the crews. History tells us that it was not the tempest, nor yet the battle, but sickness, that was the great enemy of our seamen of former days. It was sickness that arrested Columbus on his glorious enterprise, that crippled Vasco de Gama, that scattered the fleets of Drake and Cavendish, and that impaired the energies of Captain Cook and other navigators. It was by sickness that Anson lost no less than four-fifths of his men; and in the experience of one British Admiral of the sixteenth century, no fewer than 10,000 men died of a single disease, and that a most easily preventible one. When we come to compare that state of matters with what we see in the last returns of the health of the navy in 1857, then we have some satisfaction in thinking that we have such a medical department of our navy as we possess; for when we see the remarkable exemption from mortality and disease which that return indicates, when we find that scurvy is almost unknown amidst the 40,000 men of our fleet, and that there is not a single instance of death recorded that year from what was formerly the great scourge of Europe, the small-pox, then we see how much the service owes to its medical department. (Cheers.) I am not disposed, however, in the slightest degree to detract from the merit of other departments to whom much of this state of matters is due. I am not disposed to forget the improvements that have been made in the construction of our ships, and consequently in the ventilation of the 'tween decks, nor in the clothing, and, last not least, in the victualling of our crews. To all those to whom this improvement is due let our praise be cordially given. (Applause.) Let us remember that the necessity for improving matters in these respects forced itself on the attention of men who were not medical men, as for instance Captain Cook, who saw the necessity of many of the dietetic improvements since introduced. But it is, after all, to the labours of Sir John Liddell, and such men, that is due the preservation of the health of our crews; for even if the clothing and victualling departments were unimpeachable, and if our shipwrights were magicians, there would still remain a large balance indeed to go to the credit of our medical friends of the fleet, whom I cannot but congratulate on the exceedingly satisfactory condition of the health of the noble service to which they are attached. But whilst we cordially commend our friends of the naval service as discharging efficiently their professional duties, we do not forget that they have borne patiently their share of those privations and accidents which are inseparable from any profession connected with warfare. I do, in truth, wish that that was all that they had to bear, and I think you will agree with me in saying that there is no department of the public service that has more patiently and longer borne a most irrational, unworthy, and, I would say, absurd oppression and indignity than has the naval medical profession, especially in the junior ranks. (Applause.) For a long time remonstrances poured in from the profession in civil life, pointing out what was amiss in the naval medical department, especially in regard to the junior ranks of the service; and I am happy to think that this College was not behind in doing its utmost to ameliorate the condition of the assistant-surgeons of the navy. I think it was in 1848 that the Lords of the Admiralty placed at the disposal of this College the annual nomination of two assistant-surgeons in the navy, who were to receive their appointments after a competitive examination instituted by us. We entered on that duty with great pleasure, because we looked upon it as an honourable one, and in 1848 we recommended gentlemen who subsequently received appointments. But just about that time the College of Surgeons received from the medical officers of the Mediterranean Fleet a memorial addressed to them, praying that they would do something to ameliorate the condition of the assistant-surgeons of the fleet. Into the facts stated in that memorial we inquired, and we found that the complaints made were well-founded, and we immediately memorialized the authorities to redress the grievance. What we asked for the assistant-surgeons at the time was neither more nor less than that they should be made ward-room officers, which was no very startling demand; but the reply we got was, that "the Lords of the Admiralty are sorry that they cannot approve of the proposal, which is at variance with the orders of the Queen in Council, by which the rank of assistant-surgeons in the royal navy is fixed." This was plain and explicit, and we deemed it our duty to be plain and explicit too; and, at a meeting we held, it was moved by Professor Syme, and seconded by the late Sir George Ballingall, Professor of Military Surgery, that the College had long regarded the position of naval assistant-surgeons on board ship as unbecoming the members of a liberal profession, and unfavourable to the discharge of their duties; and that, as the College had endeavoured by petition and remonstrance unsuccessfully to obtain redress of the grievance, they should, until redress was given, cease to exercise their privilege of recommending candidates for the appointment. (Cheers.) He was happy to say that this College was not alone in taking that view, and that the medical professors of the University, the Royal College of Physicians, and medical bodies throughout the country, made their voices heard to the same effect; and he believed it was when the profession in civil life made its voice unmistakeably heard, that much of the grievances formerly complained of had been redressed. It took, however, a long time to bring this about, for it was not till 1855 that the assistant-surgeons of the navy were made ward-room officers, and it was only in 1859 that that warrant had been put forth, which, he thought, marked something like progress in the condition of the medical department; and their thanks, as a profession, were due to Sir John Pakington, Sir John Liddell, Colonel Boldero, and others, for what they then did in the matter. (Applause.) I sincerely trust it will not be necessary for us to put forward the same efforts again, in order to tear from the uniform of our friends that red tape, which is no fit facing for a blue-jacket. (Cheers.) But, gentlemen, we are prepared at any time we can be of use to our brethren afloat to give them all the help we can, for we have a warm interest in all they do; and the fact that we have assembled as we have done to-night may be taken as a proof of the interest we take in that admirable service. (Cheers.) Dr Maclagan concluded by proposing the health of the Medical Officers of the Channel Fleet, with the name of Dr M'Kay of the "Royal Albert," who, he said, was not only an old acquaintance, but an old pupil of his own twenty years ago.

The toast was drunk with great cordiality.

Dr M'Kay, in reply, said the medical officers of the navy present accepted the compliment now paid to them by the College, not as simply intended for themselves or the Channel Fleet, but to the whole service, from the Medical Director-General down to themselves. The compliment now paid them was one which they felt deeply to receive; and their hosts must accept as said, everything that the most warm gratitude could express. In the name of his brother officers present, and of the service generally, he thanked them most cordially for the honour that had been paid to them—an honour unexpected on the one part, and most graceful and generous on the other. With regard to Dr Maclagan's remarks personal to himself, he could only say, that if anything could have added to his gratification on this occasion, it was to hear this toast given by his old teacher, for whom he had always entertained the most fervent admiration and respect. (Applause.)

Various other toasts followed; and the intervals were filled up by some admirable songs by the President, Dr Andrew Wood, and other gentlemen, which greatly contributed to the enjoyment of the evening.

CONVERSAZIONE BY THE ROYAL COLLEGE OF PHYSICIANS TO THE OFFICERS OF THE CHANNEL FLEET.

On the evening of the 21st June, the President, Council, and Fellows of the Royal College of Physicians gave a Conversazione in honour of the officers of the Channel Fleet, in their Hall, Queen Street.

From the fleet having suddenly received sailing orders, the entertainment was rather hurriedly got up, the College having intended it to have taken place a few days later. But, notwithstanding the shortness of the invitation, a large and distinguished company filled the fine apartments thrown open for their reception.

Numerous objects of general interest were disposed about the rooms, including a large collection of photographic and stereoscopic objects contributed by members of the profession and others. An exhibition by Dr Stevenson Macadam, with the assistance of Mr Hart, of novel electric phenomena, including the beautiful displays of colour consequent on the discharge of electricity through tubes exhausted of air, excited much interest; and some pieces of ingenious mechanism were shown by Mr Alexander Bryson and Mr Sang. The more strictly professional members of the company had other objects of interest provided for their entertainment, including numerous large volumes of anatomical and botanical plates; and the gigantic thigh-bone of the extinct species of the bird Dinornis, from New Zealand, which was contributed by Professor Simpson.

Mr Howard's band was in attendance, and performed, with excellent effect, a tasteful selection of popular pieces.

Among the company were:—Of officers of the fleet, Dr M'Kay and Lieut. Walker, of the Royal Albert; Drs West and Messer, of the Mars; Dr Murray, of the Aboukir; Dr Sommerville, of the Edgar; Dr Messer, of the Edinburgh; Dr Bateson and Lieuts. Allen and Crockford, of the Diadem; Rev. Mr Hannan, of the Edinburgh; Admiral Ramsay, Dr Easton, R. N.; Dr M'Bain, R. N., naval medical agent; Mr M'Master, assistant-surgeon, 78th Regiment.

Among the general company were—Lords Deas, Jerviswood, and Ardmillan; the Lord Provost, Bailies Johnston and Forrester; Professors Pillans, Swinton, Traill, M'Dougall, Simpson, Laycock, Balfour, Lyon Playfair; the Very Rev. Dean Ramsay; the Rev. Drs Arnot and Hanna; Rev. Messrs Millar, Sandford, Faithfull, Nicolson, Watson, Main; Sheriffs Cay, J. M. Bell, Arkley, Earle Monteith, Paterson; Messrs A. B. Shand, Sandford, Skelton, Hutchison, Anderson, J. C. Smith, Irvine, M'Lennan, Hector, A. Moncrieff, advocates; Dr Schmitz; Messrs A. Cassels, Forbes of Medwyn, Robert Cox, Findlater, Payn, Raleigh, Wm. Smith, A. K. Johnston, etc.

The President of the College of Physicians, Dr Alexander Wood, was in London attending the Medical Council; but besides the Vice-President, Dr Maclagan, and the Members of Council, a great number of the Fellows of the College were present, and received as guests at least an equal number, including the President, of Fellows of the Royal College of Surgeons, and of other medical gentlemen.

PRELIMINARY EXAMINATION PAPERS FOR THE DOUBLE QUALIFICATION CONFERRED BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH.

LATIN—*Tuesday*, 1*st November* 1859.

I. Prima luce, quum summus mons a T. Labieno teneretur, ipse ab hostium castris non longius mille et quingentis passibus abesset, neque, ut postea ex captivis comperit, aut ipsius adventus, aut, Labieni cognitus esset, Considius, equo admisso, ad eum accurrit: dicit, montem, quem a Labieno occupari voluerit, ab hostibus teneri: id se a Gallicis armis atque insignibus cognovisse. Caesar suas copias in proximum collem subducit; aciem instruit. Labienus, ut erat ei praeceptum a Caesare ne praelium committeret nisi ipsius copiae prope hostium castra visae essent, ut undique uno tempore in hostes impetus fieret, monte occupato, nostros exspectabat, praelioque abstinebat. Multo denique die per exploratores cognovit, et montem a suis teneri, et hostes castra movisse, et Considium, timore perterritum, quod non vidisset pro viso sibi renuntiasse.—*Caesar*, *de Bello Gallico*, Lib. i. cap. 22.

Full value = 50.

II. There was among the banished Athenians, Thrasybulus, a gallant man, and illustrious at home, who, thinking that something ought to be attempted for his country and the common safety, even at the hazard of life, gathered together the exiles, and seized upon Phyle, a fort of the Athenians.

II. Sum inter exul Atheniensis, Thrasybulus, vir strenuus, et nobilis domus, qui ratus aliquis audeo pro patria, et communis salus, vel cum periculum vita, contraho exul, et occupo Phyle, castellum Atheniensis.

Full value = 50.

III. Publius Cornelius Scipio nondum annos pueritiae egressus patrem singulari virtute servavit. Nam quum is in pugnâ apud Ticinum contra Annibalem commissâ graviter vulneratus esset, et in hostium manus jamjam venturus esset, filius, interjecto corpore, Poenis irruentibus se opposuit et patrem periculo liberavit. Quae pietas Scipioni postea Aedilitatem petenti favorem populi conciliavit; quum obsisterent Tribuni plebis, negantes rationem ejus habendam esse, quod nondum ad petendum legitima aetas esset: "Si me," inquit Scipio, "omnes Quirites Aedilem facere volunt, satis annorum habeo." Tanto indè favore ad suffragium ferendum discursum est, ut Tribuni repente incepto destiterent.—*Liv.* xxi. 46, and xxv. 2.

Full value = 50.

IV. Tempus erat quo prima quies mortalibus ægris
Incipit, et dono divûm gratissima serpit:
In somnis, ecce, ante oculos mœstissimus Hector
Visus adesse mihi largosque effundere fletus,
Raptatus bigis, ut quondam, aterque cruento
Pulvere, perque pedes trajectus lora tumentes.
Hei mihi, qualis erat! quantum mutatus ab illo
Hectore, qui redit exuvias indutus Achilli,
Vel Danaûm Phrygios jaculatus puppibus ignes!
Squalentem barbam et concretos sanguine crines
Vulneraque illa gerens, quae circum plurima muros
Accepit patrios.—*Virg. Aen.* ii. 268.

Full value = 50.

V. Non possidentem multa vocaveris
Recte beatum: rectius occupat
Nomen beati, qui deorum
Muneribus sapienter uti,
Duramque callet pauperiem pati,
Pejusque leto flagitium timet;
Non ille pro caris amicis
Aut patriâ timidus perire.—*Hor. Od.* iv. 9, 45.

Full value = 50.

A correct version or translation of any one of these five passages, or of any two of them, which, after deduction of errors, make together the number 50, will be accepted as a "pass." Those will be entitled to higher distinction whose numbers amount to 100 and upwards.

NATURAL PHILOSOPHY, MATHEMATICS, ETC.—*Tuesday*, 1*st November* 1859.

[Full and correct answers to any number of the following questions will entitle candidates to the numbers affixed to them. The value of 200 at least must be attained to entitle a candidate to pass. Marks of distinction will be awarded to those whose answers are equivalent to 500 or upwards. Questions 7 and 14 are intended for candidates who desire to obtain marks of distinction for higher attainments.]

1. Find the seventh part of three hundred millions sixty-seven thousand and forty. [20.]
2. Add together $\frac{1}{2}$, $1\frac{2}{3}$, $2\frac{3}{4}$, $5\frac{5}{6}$, $7\frac{7}{8}$, $8\frac{8}{9}$, and $\frac{11}{12}$. [40.]
3. Water weighs about 1000 ozs. avoirdupois per cubic foot. What weight of water flows through a pipe of a square inch section in twenty-four hours, the rate of flow being two miles an hour. [60.]
4. To what standard is weight referred in this country? [20.] Is a pound of gold heavier than a pound of butter, or lighter, the former being Troy and the latter Avoirdupois? [25.] What is the difference in grains between an ounce Troy and an ounce Avoirdupois? [25.]
5. A woman bought some apples at two a penny, and as many more at three a penny. She accounted to her employer on the supposition that she had obtained them at the rate of five for twopence, but found she was twopence out of pocket. How many apples did she buy? [70.]

6. Solve the following equations:—

(1.) $\frac{x}{2}+\frac{1-x}{3}-\frac{x-3}{4}=\frac{2x-5}{4}$. [20.]

(2.) $4(x-1)-5(2-x)=1$. [20.]

(3.) $\frac{x-\frac{1}{3}}{5}-\frac{\frac{1}{4}-x}{3}+\frac{\frac{1}{7}+2x}{4}-\frac{+3x}{8}=1$. [20.]

(4.) $\left.\begin{array}{l}2x+3y=1\\3x+5y=7\end{array}\right\}$ [20.]

7. Solve the following equations:—

(1.) $x^2-5x=3-7x^2$. [50.]

(2.) $\sqrt{(2x+10)}=\sqrt{(2x+3)}+1$. [50.]

8. If one side of a triangle be produced, the exterior angle is equal to the sum of the two interior opposite angles; and all the three interior angles are together equal to two right angles. [60.]

9. To find the centre of a given circle. [60.]

10. When a force is said to act at an advantage, what do you mean by the word advantage? [30.] Do the muscles of the body act generally on the bones at an advantage? [30.]

11. What is meant by the centre of gravity? [20.] Give some of its properties. [20.] Exhibit the centre of gravity of a triangle by a construction. [40.]

12. The weight of the fluid displaced by a floating body equals the weight of the body itself. Explain this. [50.]

> A man just floats in water. If his weight is twelve stone, find by the data, in Question 3, how many cubic feet he measures. [50.]

13. Explain and illustrate the second law of motion; that is to say, the law which relates to the composition of existing motion with that which is generated by the action of force. [100.]

14. Show that the path of a projectile is a parabola. Explain the necessity for taking an aim higher in an increasing ratio as the object fired at is more distant. [100.]

PRELIMINARY EXAMINATION PAPERS—SECOND SERIES.

LATIN.—*Tuesday*, 1*st May* 1860.

FOR THE PASS.

I. Pyrrhus, being importuned by a second embassy of the Tarentines, to which were added the petitions of the Samnites and Lucani, who wanted aid against the Romans, being induced not so much by the entreaties of his petitioners, as with the hopes of getting the empire of Italy, promises them that he would come with an army.	I. Pyrrhus, fatigatus iteratus legatio Tarentinus, qui accedo preces Samnis et Lucanus, qui indigeo auxilium adversus Romanus, inductus non tam preces supplex, quàm spes invado imperium Italia, polliceor is sui venio cum exercitu.

Perfect answer $= 35$.

II. Palus erat non magna inter nostrum atque hostium exercitum: hanc si nostri transirent hostes exspectabant; nostri autem, si ab illis initium transeundi fieret, uti impeditos aggrederentur, parati in armis erant. Interim praelio equestri inter duas acies contendebatur. Ubi neutri transeundi initium faciunt: secundiore equitum nostrorum praelio, Caesar suos in castra reduxit. Hostes protinùs ex eo loco ad flumen Axonam contenderunt, quod esse post nostra castra demonstratum est: ibi vadis repertis, partem suarum copiarum transducere conati sunt:

eo consilio, ut, si possent, castellum cui praeerat Q. Titurius legatus, expugnarent, pontemque interscinderent: sin minus, agros Rhemorum popularentur, qui magno nobis usui ad bellum gerendum erant, commeatusque nostros sustinebant. —*Caesar*, *de Bell. Gall.*, Lib. ii.

Perfect answer = 35.

FOR HONOURS.

III. Quum in Senatu de tertio Punico bello ageretur, Cato jàm senex delendam Carthaginem censuit, negavitque ea stante salvam esse posse Rempublicam. Quùm autem id, contradicente Scipione Nasica, non facile Patribus persuaderet, deinceps quoties de re aliqua sententiam dixit in Senatu, addidit semper: "Hoc censeo; et Carthaginem esse delendam."

Perfect answer = 20.

IV. The two Gracchi were grandsons of Scipio Africanus, whose daughter Cornelia was their mother. That wisest woman of her time justly conceived that children well brought up were the greatest ornament to a Roman matron. When a Campanian lady was displaying her gems, and the most precious things she had, with womanish vanity, Cornelia engaged her in conversation till the two boys should come back from school; and on their return, pointing to them, she said to her friend, "These are my jewels."

Perfect answer = 20.

V. *To be turned into a Latin Hexameter*:—

We always strive after (*in*) the forbidden, and desire (things) denied.

Perfect answer = 20.

50 marks out of the first two will entitle to pass. 100 out of the whole Paper will entitle to Honours.

NATURAL PHILOSOPHY, MATHEMATICS, ETC.—*Tuesday*, 1*st May* 1860.

[Full and correct answers to any number of the following questions will entitle candidates to the numbers affixed to them. The value of 200 at least must be attained to entitle a candidate to pass. Marks of distinction will be awarded to those whose answers are equivalent to 500 or upwards.]

1. Divide fourteen thousand two hundred and thirty-five, by thirty-nine. [30.]

2. Multiply L.17, 15s. $8\frac{3}{4}$d., by 17. [40.]

3. Find the value of 7 cwts. 3 qrs. $17\frac{1}{2}$ lbs., at L.2, 11s. 9d. per cwt. [60.]

4. Add the fractions $\frac{2}{3}$, $\frac{3}{4}$, $\frac{4}{5}$, $\frac{5}{6}$, and $\frac{7}{8}$, and express the sum in decimals. [50.]

5. A sovereign weighs 123 grains, of which only 22 parts in 24 are gold. What is the worth of 123 grains of pure gold? [80.]

6. Two equal glasses are full, the one of a mixture of the strength of 1 of spirit to 12 of water, the other of a mixture of the strength of 1 of spirit to 20 of water. When the contents of the two glasses are poured together, what is the strength of the mixture? [100.]

7. Solve the following equations:—

(1.) $20-3x+8=60-7x$. [15.]

(2.) $3\,\frac{x-1}{2}-5\,\frac{6-x}{4}=\frac{x+7}{3}+\frac{1}{2}\left(x-\frac{x}{2}\right)$ [30.]

(3.) $\frac{12x+7}{9}+\frac{14x-13}{3(4x+3)}=\frac{4}{3}(x+1)$. [30.]

(4.) $\left.\begin{array}{l}3y-2x=11\\13x-5y=1\end{array}\right\}$. [25.]

8. A person buys 420 apples at 3 a penny, and the same number at 4 a penny, and sells the whole at 7 for 2d. How much does he gain or lose? [60.]

9. Parallelograms upon the same base and between the same parallels are equal. [60.]

10. If two circles touch each other externally, the straight line which joins their centres will pass through the point of contact. [60.]

11. Explain the circumstance in "Mechanics," that what is gained in power is lost in space [40], and give, as an illustrative example, some system of pulleys, stating the *ratio* between the power and the weight necessary for maintaining an *equilibrium* [30], and the relation between the space passed through by the power and that passed through by the weight, when the pulleys are applied to raise a heavy body [30].

12. The first law of motion is, "that a body in motion will continue to move in a straight line with a uniform velocity, if not acted on by force." Explain the apparent inconsistency of this with every-day experience in the following instances:—

(1.) In the alternate vibrations of the pendulum of a clock. [30.]
(2.) In the curved line described by a stone when thrown from the hand. [30.]

13. State distinctly the hydrostatic law by which the following problem is solved [20], and solve it. A man just floats (all but sinks) in water. Now, water weighs 1000 ozs. avoirdupois the cubic foot. Required the solid content of a man of 10 stone weight. [80.]

14. State the law of refraction. [20.] Trace the course of a pencil of light through a convex lens. [50.] How does such a lens aid the vision of the aged? [30.]

GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

Minutes of Meeting, Thursday, June 14, 1860.

ROYAL COLLEGE OF PHYSICIANS, LONDON.

Sir BENJAMIN C. BRODIE, Bart., *President*, took the Chair at two o'clock P.M. *Present*—Dr Burrows, Mr Green, Mr Nussey, Dr Acland, Dr Bond, Dr Embleton, Dr Storrar, Dr Alexander Wood, Dr Andrew Wood, Mr Syme, Dr A. Thomson, Dr A. Smith, Dr Leet, Dr Apjohn, Dr Corrigan, Sir James Clark, Sir Charles Hastings, Mr Lawrence, Mr Teale, Dr Christison, Dr Stokes—Dr Francis Hawkins, *Registrar*.

The minutes of the last meeting were read and confirmed.

1. *Moved* by Dr Andrew Wood; *seconded* by Dr Storrar; and *agreed to*:— "That the following Members constitute the Business Committee: Dr Andrew Wood, *Chairman*, Mr Teale, Dr Embleton, Dr Thomson, Dr Corrigan."

2. *Moved* by Dr Storrar; *seconded* by Dr Stokes; and *agreed to*:—"That the further consideration of the subjects of General and Medical Education be referred to a Committee of the whole Council."

3. *Moved* by Dr A. Smith; *seconded* by Mr Teale; and *agreed to*:—"That a Finance Committee be appointed, to report on the expenditure on the part of the General Medical Council, and all other matters respecting the financial affairs of the Council;—The Committee to consist of Dr A. Smith, *Chairman*, Dr Alexander Wood, Mr Nussey, Mr Green."

4. *Moved* by Dr Corrigan; *seconded* by Dr Apjohn; and *agreed to*:—"That the Medical Council, having had their attention called to various defects in the Medical Act, which interfere with its efficient working, appoint a Committee to report upon this subject." *Resolved*—"That the Committee consist of the following Members:—"Dr Corrigan, *Chairman*, Dr Thomson, Dr Storrar, Dr Apjohn, Dr Burrows, Dr Acland, Dr Andrew Wood, Mr Green."

5. *Moved* by Dr Storrar; *seconded* by Dr Andrew Wood; and *agreed to*:— "That the Council resolve itself into a Committee on Education, to-morrow, at two o'clock."

The President was compelled to leave the Chair, which was then taken by Sir James Clark, Bart.

6. *Moved* by Dr Andrew Wood; *seconded* by Mr Teale; and *agreed to*:—"That a Committee be appointed, to consider special claims for registration;—The Committee to consist of Dr Alexander Wood, *Chairman*, Sir Charles Hastings, Dr Bond, Mr Syme, Dr Leet, Dr Embleton, Dr A. Smith."

7. Letters having been read, addressed by the Metropolitan and Provincial Inspectors of Anatomy to the President of the Medical Council, suggesting that, with a view to the better working of the Anatomy Act in England, the Council should recommend that the Medical Session in London should commence on the 1st of November, instead of on the 1st of October, in each year—*Resolved:* "That answers should be returned, stating that the subject does not lie within the province of the Medical Council."

8. *Moved* by Dr Alexander Wood; *seconded* by Dr Acland; and *agreed to*:—"That the Council meet at one o'clock to-morrow, for the purpose of considering the case of Richard Organ, and that their law advisers be requested to attend, to give such information as may be required."

9. Memorials were read from the Medical Protective Associations of Ulster, and of the County and City of Cork, recommending a separate Medical Register for Ireland. *Moved* by Dr Alexander Wood; *seconded* by Mr Green; and *agreed to*:—"That the Medical Act does not authorize the publication of separate Registers for each division of the United Kingdom, but that the Memorials be referred to the Committee appointed to report upon the defects in the Medical Act."

10. A letter having been read from Mr William Whytehead Morris, complaining that he had been threatened with prosecution for assuming the title of Surgeon, he being a Licentiate of the Apothecaries' Society of London, and not possessing a Surgical Diploma, it was directed that an answer should be returned, stating that the subject of his communication is not a matter in which the Medical Council can interfere.

Minutes of Meeting, Friday, June 15, 1860.

Mr GREEN took the Chair at one o'clock P.M. *Present*—Dr Burrows, Mr Green, Mr Nussey, Dr Acland, Dr Bond, Dr Embleton, Dr Storrar, Dr Alexander Wood, Dr Andrew Wood, Mr Syme, Dr A. Thomson, Dr A. Smith, Dr Williams, Dr Leet, Dr Apjohn, Dr Corrigan, Sir James Clark, Sir Charles Hastings, Mr Lawrence, Mr Teale, Dr Christison, Dr Stokes—Dr Francis Hawkins, *Registrar*.

The minutes of the last meeting were read and confirmed.

1. The Council met at one o'clock, in accordance with the resolution of yesterday, and had a conference with the Solicitors, in reference to the case of Richard Organ.

2. *Moved* by Dr Alexander Wood; *seconded* by Dr Christison; and *agreed to*:—"That the written questions put to the Solicitors be preserved, along with their answers, which the Registrar should be instructed to obtain in writing."

3. A letter was read from Dr James Watson, resigning his seat in the Council, as Representative of the Glasgow Faculty of Physicians and Surgeons.

The Council then resolved itself into a Committee on Education; Sir Benjamin C. Brodie, Bart., *President*, taking the Chair.

1. *Moved* by Dr Storrar; *seconded* by Dr Alexander Wood; and *agreed to*:—"That the President be requested to act as Chairman of the Committee on Education."

2. *Moved* by Dr Storrar; *seconded* by Dr Corrigan; and *agreed to*:—"That Resolutions 6 and 7, of the 3d of August 1859, in relation to Education, be now read."

(6.) 'That for the purpose of guiding the Council in coming to a determination, in conformity with sect. 20 of the Act, respecting the sufficiency or insufficiency of the course of study and examinations of the several bodies whose regulations for their Fellowships, Licences, and Degrees have been communicated to the Council, a Committee be appointed, to prepare a Report, laying down a minimum of examinations, and subjects of examinations, without which no qualification will be held, by the Council (sect. 20), such as to secure the possession by persons obtaining such qualifications, of the requisite knowledge and skill for the efficient practice of their profession; and that it be an instruction to the Committee to report on the expediency, or the reverse, of this Council recommending what, in their opinion, would constitute a sufficient course of General and Professional Education.'

(7.) 'That a Committee be appointed, to examine the returns by the different bodies included in Schedule (A), to report, in regard to each of these, as to how far the course of study and examination required by each is calculated to secure the possession, by persons obtaining their respective qualifications, of the requisite knowledge and skill for the efficient practice of their profession; and to report to the Council. As also in regard to the most effective machinery for superintending the examination, so as to secure that they should conform to a standard of examinations in General and Professional Education considered sufficient by the Council.'

3. *Moved* by Dr Corrigan; *seconded* by Dr Storrar; and *agreed to*:—" That the communications received from such Universities and Corporations as have forwarded observations to the General Council on the Educational Report of last year, transmitted to the bodies enumerated in Schedule (A), be now read."

Communications were read from the following bodies:—Royal College of Surgeons, Edinburgh; University and King's College of Aberdeen; University of Marischal College, Aberdeen; University of Glasgow; Faculty of Physicians and Surgeons of Glasgow; Queen's University of Ireland; University of Dublin; King and Queen's College of Physicians in Ireland; Royal College of Surgeons of Ireland; Apothecaries Hall of Ireland; Society of Apothecaries, London.

Copies of printed Regulations were laid before the Committee from the abovementioned bodies, and from the University of St Andrews; University of Cambridge; University of Oxford; Royal University of London; College of Physicians, London; College of Physicians, Edinburgh; Society of Apothecaries, London.

Mr Green reported to the Committee, that the Royal College of Surgeons of England would shortly forward their Report.

4. *Moved* by Dr Corrigan; *seconded* by Dr Smith; and *agreed to*:—" That such parts of the Report of the Education Committee of August 11, 1859, as relate to General Education, be first considered."

5. *Moved* by Dr Corrigan; and *seconded* by Dr Bond: in lieu of the first recommendation of the Educational Committee, viz.,—'That all Students pass an examination in General Education before they commence their professional studies;'—" That all Students pass their examinations in General Education, previously to, or within the two first years of their professional studies, except such Students as may be exempted from such examination, as hereinafter provided."

The motion was negatived.

Confirmed—B. C. BRODIE.

Minutes of Meeting, Saturday, June 16, 1860.

Sir BENJAMIN C. BRODIE, Bart., *President*, took the Chair at two o'clock P.M. *Present*—Dr Burrows, Mr Green, Mr Nussey, Dr Bond, Dr Embleton, Dr Storrar, Dr Alexander Wood, Dr Andrew Wood, Mr Watt, Mr Syme, Dr A. Thomson, Dr A. Smith, Dr Williams, Dr Leet, Dr Apjohn, Dr Corrigan, Sir

James Clark, Sir Charles Hastings, Mr Lawrence, Mr Teale, Dr Christison, Dr Stokes—Dr Francis Hawkins, *Registrar*.

The minutes of the last meeting were read and confirmed.

Mr George Watt having produced his commission from the Faculty of Physicians and Surgeons of Glasgow, took his seat in the Council as Representative of the Faculty.

1. *Moved* by Dr Andrew Wood; *seconded* by Mr Teale; and *agreed to*:—"That it be remitted to the Business Committee to prepare a report as to the form in which new Members shall take their place; both in the Branch Councils and in the General Council."

2. Dr Christison presented the Report of the Pharmacopœia Committee.

Moved by Dr Storrar; *seconded* by Dr A. Smith; and *agreed to*:—"That the Report of the Pharmacopœia Committee be received, and printed in the minutes."

REPORT OF THE PHARMACOPŒIA COMMITTEE, *June* 16, 1860.

"The Committee appointed by the General Council of Medical Education and Registration beg to submit to the Council the following Report of the progress made towards the completion of the 'British Pharmacopœia.'

"The British Pharmacopœia consists of two parts and an appendix. In the first is contained a list of all substances employed in the treatment of disease. It is, in fact, a complete list of the Materia Medica. Each substance is introduced, with its Latin or scientific name, the English translation of the same, its definition, and its source. These constitute the really official portion of the first part. It is, however, proposed to append to each article some of the more important characters by which it may be recognised, and the tests by which its purity may be ascertained; and, lastly, the names of the different officinal preparations into which it enters as an important ingredient, will be enumerated. This part of the Pharmacopœia has been completed, as far as the number of substances to be introduced is concerned; and has been divided into three portions, which have been allotted to the different sub-committees.

"The Dublin Committee have made considerable progress in their third part, and also completed some of the more important processes for the metallic preparations.

"The Edinburgh Committee have devoted considerable attention to their part of the work, and could finish it in a short period of time.

"The London Committee have completed about half their share, and the remainder is in a forward state. Specimen pages, illustrating the mode in which this portion of the work is proposed to be framed, have been prepared for submission to the Committee.

"The list of the Materia Medica, or first part of the Pharmacopœia, is necessarily, for various reasons, in a less advanced state than the second half; but it is, at the same time, the portion which may be speedily finished, when the various groups of officinal preparations are framed. Its completion requires little or no experimental inquiry, but necessarily demands that the Galenical preparations should have been definitely determined upon.

"The second part of the British Pharmacopœia consists of different groups of the preparations of substances contained in the first, together with the processes for preparing the metallic or other chemical drugs. The proposed groups, often named Galenical, are the following:—The acids, confections, cataplasms, decoctions, enemata, extracts, honey, etc., infusions, liniments, lozenges, mixtures and mucilages, ointments, plasters, pills, spirits, syrups, tinctures, vinegars, waters, and wines.

"To the Edinburgh Committee have been allotted the cataplasms, decoctions, honeys, lozenges, plasters, syrups, and waters.

"To the Dublin Committee, enemata, infusions, mixtures and mucilages, pills, tinctures, wines, and ointments.

"To the London Committee, the acids, confections, extracts, liniments, powders, spirits, and vinegars.

"Each group, when completed by any committee, has been sent to the other committees, received their comments, and then revised by the committee who originally framed it.

"The Secretary of the Edinburgh Sub-Committee reports, that all the groups specially allotted to it have been drawn up and transmitted for revision to one or other of the associate committees; and that this Committee has likewise commented upon the mixtures and mucilages, infusions, powders, confections, enemata, and ointments; and, lastly, it has re-examined most of its own groups, after receiving the comments of the other committees.

"The Dublin Committee has constructed all the groups allotted to it; has transmitted them to the other committees; has received the comments of the associate committees upon the ointments, enemata, infusions, mixtures, and mucilages, and replied to them. It has also considered and reported upon the acids, honeys, lozenges, confections, powders, decoctions, waters, and plasters, received either from the London or Edinburgh Committees.

"The London Committee has framed all the groups allotted to it, with the exception of the extracts. This group has been deferred, in order to allow experiments to be made during the present summer season; but it is now in a very forward state, and will soon be ready for transmission to Dublin and Edinburgh.

"The London Committee has also carefully revised and commented upon all the groups received from Edinburgh and Dublin; in fact, upon all the Galenical groups, with the exception of the tinctures and wines; and, lastly, it has revised some of its own preparations, after having taken into consideration the criticisms of the associate committees.

"A portion of the second part of the Pharmacopœia has been set up in type, for the purpose of being submitted to the Committee.

"Having passed over in review the work which has already been accomplished by the Pharmacopœia Committee, it remains to be shown what is still incomplete, and the probable time required for its completion.

"To complete the second part of the Pharmacopœia, a few weeks only would be required, as far as the sub-committees are concerned.

"The first portion of the work might probably occupy a month or two longer, requiring some points to be arranged by conference; and, lastly, the Appendix—which will contain the substances employed only in the preparation of chemicals, but not themselves used as medicines, together with the tests for the detection of the qualities of drugs—might be estimated to occupy about a month.

"Should the sub-committees continue to work diligently, it is probable that the work might be prepared for press by the middle or latter end of November; but, to insure this, it may be necessary that at least one meeting of the General Committee, formed by deputies from the different sub-committees, should be held previous to that time."

Dr Christison further reported from the Pharmacopœia Committee, that the Committee had felt it advisable to refer to the General Medical Council for instructions as to the powers of the Committee in certain parts of the business entrusted to them by the Council. The Council were of opinion that the Committee had rightly interpreted their powers. In connection with this opinion, Dr Christison, as requested by the Pharmacopœia Committee, *moved* the following resolutions, which were *seconded* by Dr Storrar, and *agreed to* by the Council:—

(1.) "That it be remitted to the Pharmacopœia Committee, either to dispose of the forthcoming edition of the British Pharmacopœia to a publisher or publishers, or to publish the edition as the property of the General Medical Council, according as the Committee shall judge to be expedient."

(2.) "That, in the event of the Committee resolving to sell the edition, the Executive Committee of the General Medical Council shall have the power to grant, in favour of the publisher of the work, such title in the property of it as the General Council can grant."

(3.) "That the sum of L.500 be voted by the General Medical Council, in addition to the vote of November 24th, 1858, towards defraying the current expenses of the Pharmacopœia Committee."

3. The following letter was read, addressed to the Registrar of the General Medical Council :—

"War Office, 4th June 1860.

"Sir,—I am directed by the Secretary of State for War to transmit to you the accompanying papers in reference to the claims of Licentiates of the Apothecaries' Hall of Dublin, to enter for the competitive examination for the appointment of Assistant-Surgeon in the Army, together with the opinion of the Attorney-General thereon.

"Mr Herbert will be glad to be furnished with the opinion of the General Medical Council upon the question thus raised.—I have the honour to be, etc.,

"Edward Lugard.

"The Registrar of the General Medical Council."

Requested that the enclosure be returned.

The enclosure was returned, being the case on behalf of the Governor and Company of the Apothecaries' Hall of Ireland, and the opinion of the Attorney-General of England thereon, which had been previously sent to the Council.

Moved by Dr Leet; and *seconded* by Mr Syme :—"That the licence of the Apothecaries' Hall of Ireland is a legal qualification to practise medicine."

Amendment, *Moved* by Dr Alexander Wood; and *seconded* by Mr Lawrence :— "That it does not appear to the Medical Council that the Act of the Apothecaries' Hall of Dublin confers on the Licentiates of that body any right to practise medicine : That, in the opinion of the Council, the inclusion of the title of Licentiates of that body, in Schedule (A) of the Medical Act, does not confer any new powers on that body : That the Council therefore adhere to the opinion expressed by them on the 8th of August 1859."

The debate was adjourned, on the motion of Dr Corrigan, to Monday, at one o'clock.

Confirmed—R. Christison.

Minutes of Meeting, Monday, June 18, 1860.

Dr Christison took the chair at one o'clock p.m. *Present*—Dr Burrows, Mr Green, Mr Nussey, Dr Bond, Dr Embleton, Dr Storrar, Dr Alexander Wood, Dr Andrew Wood, Mr Watt, Mr Syme, Dr A. Thomson, Dr A. Smith, Dr Leet, Dr Apjohn, Dr Corrigan, Sir James Clark, Sir Charles Hastings, Mr Lawrence, Mr Teale, Dr Stokes. Dr Francis Hawkins, *Registrar*.

The minutes of the last meeting were read and confirmed.

The adjourned debate on the Dublin Apothecaries' Question was resumed.

1. Amendment, *moved* by Dr Corrigan; and *seconded* by Dr Stokes :— "That the General Medical Council having again carefully considered the subject referred to in the letter from the War Office, of 23d March 1860, addressed to the Secretary of the Apothecaries' Hall of Ireland, adhere to the opinion expressed by them in their resolution of 9th August 1859, which is as follows : 'That it is the opinion of this Council that the licence of the Apothecaries' Hall of Ireland is not equivalent to a degree or licence in medicine from a University or College authorized to grant such, as, from a perusal of the Apothecaries' Act, 31 Geo. III., there does not appear to be any provision or authority for examining in medicine : and further, that, if a candidate be rejected by the Apothecaries' Hall of Ireland, the Apothecaries' Act, sec. 23, declares that the rejected candidate may appeal to the King and Queen's College of Physicians in Ireland,

who are then authorized to reverse such decision, if it seem fit to them, and to grant to such appellant the right to practise the art and mystery of an apothecary without any examination in medicine.' "

The debate was adjourned on the motion of Dr Corrigan.

2. *Moved* by Dr Andrew Wood; *seconded* by Mr Teale; and *agreed to*:—"That the consideration of the course of proceeding in the case of Richard Organ, and the reading of certain documents connected with it, take precedence of the orders of the day."

A memorial was read, addressed to the General Medical Council by the York Medico-Ethical Association, relative to the case of Richard Organ.

3. *Moved* by Mr Teale; *seconded* by Dr Alexander Wood; and *agreed to*:—"That the memorial of the York Medico-Ethical Association be entered upon the minutes."

"To the General Council of Medical Education and Registration of the United Kingdom.

"We, the undersigned members of the York Medico-Ethical Association, having been informed that the name of Mr Organ, of Cawood, near Selby, Yorkshire, is still on the Medical Register; and understanding also, that, on the occasion of a recent trial, the merits of his case were not decided, owing to his not having received the requisite notice,—most earnestly and respectfully urge upon the Medical Council to proceed with the consideration of his case; and, should it be found that he is without any legal qualification to practise, to take the proper steps to remove his name from the Register.—G. Shann, M.D., *President;* T. Simpson, M.D.; W. E. Swaine, M.D., F.R.C.P.L.; Caleb Williams, M.D.; W. D. Husband, F.R.C.S. Eng., etc.; Alfred Ball, M.R.C.S.E.; Wm. Matterson; William Procter; John J. F. Marshall; Temple C. Paley; John B. Pritchett; Wm. Reed; Thos. W. Burkett; Henry Keyworth; James Allen; Edward Allen; S. W. North; B. Dodsworth; Wm. Anderson; Isaac Mennell Williams; Henry Crummack; George Hornby; John Wightman; Henry C. Hare; George Clark; Oswald A. Moore, *Sec.*"

The following letter was also read, addressed to the Registrar by the solicitor of Mr Organ:—

"10, Symonds Inn, W.C., 15*th June* 1860.

"SIR,—I regret the decision of the Medical Council, communicated in your letter of the 12th inst.; and as it appears that they are determined to take upon themselves the determination of the legal construction of an Act of Parliament, without competent assistance, it is proper that I should shortly state, for their information, the grounds on which Mr Organ wholly disputes their jurisdiction to strike him off the Register, and the course which it has become necessary that he should take.

"The notice of the 28th May last, received from you, points to the exercise of an authority given to the Council under the 26th sec. of the Medical Act; and also under the 29th sec. of the same Act. Mr Organ is advised that neither of these have any application to his case. The 26th sec. evidently points to cases of incorrectness, etc., coming before the Council, by way of appeal from the acts of the Registrar.

"Mr Organ's name was put upon the Register by the act and order of the General Council itself, in exercise of the special authority given to them under the 46th section.

"This order was made after due deliberation and inquiry, both, as it seems, of the University of Jena, of the Poor-law Board, and after receiving further information and evidence from Mr Organ himself. If there was any incorrectness in putting Mr Organ's name on the Register (but which Mr Organ wholly denies), it was the incorrectness of the General Council itself. And Mr Organ is advised that, having once exercised this authority, and decided the matter, the Council cannot reopen the inquiry, on the suggestion, either by themselves or any other party, that they came to a previous incorrect conclusion, and that the 26th section gives no colour of authority to such a proceeding.

"With respect to the 29th section, it hardly requires a legal mind to perceive at once that it can only apply to misconduct of *registered* medical practitioners, or, in other words, to misconduct committed *after registration.* Now, as the only suggestion of misconduct on the part of Mr Organ relates to matters alleged to have occurred before he was registered, it is evident that the Council can have no authority whatever to go into such an inquiry.

"Having thus put the Council fairly in possession of the grounds on which their jurisdiction is disputed, it only remains for me to state the course which Mr Organ will adopt. In order not to show disrespect to the Council, he will attend, in pursuance of their summons; but, as he would compromise his position by becoming a party to the inquiry, and offering any evidence, he will refrain from doing so, and will only attend the inquiry under protest.

"It is right I should also give notice, that if his name should be wrongfully erased from the Register, he will look to the Council for compensation for any damages which he may sustain therefrom, and take such proceedings for this purpose as he may be advised.—I remain, etc.,

"JAMES FLUKER.

"Francis Hawkins, Esq., M.D.,
Medical Registration Office, 32, Soho Square, W."

The solicitors of the Council being present, Richard Organ and his solicitor were called before the Council.

The Chairman then stated the charges against Richard Organ, in the following words:—It is charged against you, that you are not possessed of any qualification entitling you to registration under the Medical Act of 1858; that certain of the representations contained in your memorial to this Council, dated 12th January 1859, are untrue; and that your name has been incorrectly placed on the Register: And, further, that you have been guilty of conduct infamous, in a professional respect, in endeavouring to obtain, by fraudulent means, a diploma from the Royal College of Physicians of Edinburgh.

The solicitor of Mr Organ having refused, in the terms of his letter previously read, to offer any answer to them, and having repeated the protest contained in that letter, Mr Organ and his solicitor were requested to withdraw.

4. *Moved* by Dr Alexander Wood; *seconded* by Dr A. Smith; and *agreed to:*—"That Mr Organ be recalled, and that the evidence in support of the charges be read in his presence."

Mr Organ and his solicitor having been recalled, the whole of the evidence in proof of the charges was read.

Mr Organ was then asked whether he had any answer to offer in refutation of the evidence which had been read. Whereupon Mr Organ's solicitor declared, on the part of Richard Organ, that he declined to take any part in the proceedings of the Council, relying upon the letter above quoted, which he again read.

Mr Organ and his solicitor then withdrew.

5. *Moved* by Sir C. Hastings; *seconded* by Dr Alexander Wood; and *agreed to:*—"That it has been proved to the satisfaction of this Council that the entry of the name of Richard Organ on the Register has been fraudulently and incorrectly made."

6. *Moved* by Dr Storrar; *seconded* by Mr Teale; and *agreed to:*—"That Richard Organ is judged by this Council, after due inquiry, to have been guilty of infamous conduct in a professional respect."

7. *Moved* by Dr Storrar; *seconded* by Dr A. Thomson; and *agreed to:*—"That the further consideration of the case of Richard Organ be adjourned till to-morrow, at two o'clock."

The adjourned debate on the Dublin Apothecaries' Question, after having been again resumed, was further adjourned on the motion of Dr Storrar.

It was *resolved*—"That the Council meet to-morrow, as a Committee on Education, at twelve o'clock."

Confirmed—B. C. BRODIE.

Minutes of Meeting, Tuesday, June 19, 1860.

Sir BENJAMIN C. BRODIE, Bart., *President*, took the Chair at two o'clock P.M. *Present*—Dr Burrows, Mr Green, Mr Nussey, Dr Acland, Dr Bond, Dr Embleton, Dr Storrar, Dr Alexander Wood, Dr Andrew Wood, Mr Watt, Mr Syme, Dr A. Thomson, Dr A. Smith, Dr Leet, Dr Apjohn, Dr Corrigan, Sir James Clark, Sir Charles Hastings, Mr Lawrence, Mr Teale, Dr Christison, Dr Stokes—Dr Francis Hawkins, *Registrar*.

The minutes of the last meeting were read and confirmed.

The Solicitors of the Council being present—

1. *Moved* by Mr Teale; *seconded* by Dr Alexander Wood; and *agreed to*:—"That it having been proved to the satisfaction of the General Council that the entry of the name of Richard Organ has been fraudulently and incorrectly made on the Register, the General Council do by this order, in writing, direct that his name be erased from the Register."

2. *Moved* by Mr Green; *seconded* by Mr Nussey; *and agreed to*:—"That Richard Organ having been judged by this General Council, after due inquiry, to have been guilty of infamous conduct in a professional respect, the General Council do hereby adjudge, that the name of the said Richard Organ be erased from the Register, and do by this order direct the Registrar to erase his name from the Register accordingly."

3. *Moved* by Mr Storrar; *seconded* by Mr Syme; *and agreed to*:—"That a copy of these orders, signed by the President in the Chair, and countersigned by the Registrar, be transmitted to Richard Organ."

The adjourned debate on the Dublin Apothecaries question was resumed.

Dr Alexander Wood was allowed to withdraw the amendment which he had moved on the 16th of June, viz.,—"That it does not appear to the Medical Council, that the Act of the Apothecaries' Hall of Dublin confers on the Licentiates of that body any right to practise medicine; that, in the opinion of the Council, the inclusion of the title of Licentiates of that body in Schedule (A) of the Medical Act does not confer any new powers on that body; that the Council therefore adhere to the opinion expressed by them on the 8th of August 1859," in order that the amendment moved by Dr Corrigan on the 18th of June might be substituted for it, viz.,—"That the General Medical Council having again carefully considered the subject referred to in the letter from the War Office, of 23d March 1860, addressed to the Secretary of the Apothecaries' Hall of Ireland, adhere to the opinion expressed by them in their resolution of 9th August 1859, which is as follows: 'That it is the opinion of this Council that the licence of the Apothecaries' Hall of Ireland is not equivalent to a degree or licence in Medicine from a University or College authorized to grant such, as, from a perusal of the Apothecaries' Act, 31 Geo. III., there does not appear to be any provision or authority for examining in medicine; and further, that if a candidate be rejected by the Apothecaries' Hall of Ireland, the Apothecaries' Act, sec. 23, declares that the rejected candidate may appeal to the King and Queen's College of Physicians in Ireland, who are then authorized to reverse such decision, if it seem fit to them, and to grant to such appellant the right to practise the art and mystery of an apothecary without any examination in medicine.

The amendment *moved* by Dr Corrigan, and *seconded* by Dr Stokes, was put to the vote, and *carried*.

Dr Storrar required that the names of the majority and minority should be entered on the minutes.

Majority.—Mr Green, Dr Acland, Dr Bond, Dr Alexander Wood, Dr Andrew Wood, Mr Watt, Dr A. Smith, Dr Apjohn, Dr Corrigan, Mr Lawrence, Mr Teale, Dr Stokes. *Minority.*—The President, Dr Burrows, Mr Nussey, Dr Embleton, Dr Storrar, Mr Syme, Dr A. Thomson, Dr Leet, Sir James Clark, Bart., Sir Charles Hastings, Dr Christison.

4. *Moved* by Dr Andrew Wood; and *seconded* by Dr Christison:—"That the

letter from Dr James Murray Macculloch, and the opinion of counsel on his case, be recorded on the minutes."

Amendment *moved* by Dr Corrigan ; and *seconded* by Dr A. Smith :—" That the letter from Dr Macculloch be inserted in the minutes."

Amendment *carried*.

" 38, Castle Street, Dumfries,
May 29*th*, 1860.

" Sir,—Although personally a stranger to you, I take the liberty of writing to you upon a matter personal to myself. I have observed from a notice, published in the *Edinburgh Medical Journal* for December 1859, that it has been proposed to call the attention of the Medical Council, of which you are President, to my connection with the case of Mr Broatch, who was convicted under the Medical Act in September last year.

" I am anxious that my conduct should not be misunderstood ; and as I am not aware whether the Council may think it right to take any official cognizance of the matter, I beg to solicit your impartial perusal of the facts, in order that with you, as the head of my profession, I may not stand under undeserved imputation.

" I do not trouble you with any of the personal and acrimonious discussion which has taken place. It may suffice to say, that a great deal of enmity and ill-feeling has been exhibited towards me, and I have no doubt I have myself been heated, and in some respects injudicious.

" The facts to which I beg your attention are these. The Medical Act, which fixed the date of its operations for the 1st of January 1859, was not fully understood in the district of the county in which I resided (Dumfries). Indeed the only advertisement on the subject (which appeared only once in one of the local papers of the district), informing medical practitioners of the necessity for registration, was on the date of December 14, 1858, so that a very short time was given to comply with the provisions of the Act.

" As one of the conditions of the registration, it was necessary to forward certain attestations of qualification, one of which was the signature of a medical man to a certificate purporting to state that the claimant had exhibited for the inspection of the signer his diploma or qualification.

" Knowing the object of the statute to be to prevent the operation of quacks and charlatans, under the cloak of professional titles, I regarded this as a mere matter of form with respect to medical men on whose qualifications no reasonable doubt rested, and I have reason to know that it was so regarded by the majority of the practitioners in this district.

" Mr Broatch was one of the medical men of this district who did not hear of or see the advertisement of the 14th December 1858, until nearly the entire interval had expired. He came to me a few days before the 1st of January 1859, to sign his certificate. I asked him for his diploma, as the certificate stated that I had seen it. He told me that he had passed and got his diploma in March 1822, from the Edinburgh Royal College of Surgeons ; that in 1826, before leaving Edinburgh (where he first practised), he had brain fever, was long ill and insensible, and that when he recovered he found he had been robbed, his diploma having disappeared with the other things. Shortly afterwards, removing to Dunscore, he commenced practice again, and finding no special use for his diploma, he had neglected to apply for a duplicate or a certificate.

" *I fully believed* Mr Broatch, and indeed, notwithstanding subsequent events, I still believe that he did not deceive me. I had known Mr Broatch for thirty years, having repeatedly met him in practice, and ever found him truthful, honourable, and skilful. I knew that he was met and respected by all the practitioners of the district of any standing. I knew he was respected and bore a high character in his own locality. I knew he was and had been parochial surgeon to two parishes for many years, an appointment *not held* by unqualified practitioners in *this* part of the country *before* the passing of the Medical Act. I had seen his name year after year in the London Medical

Directory, a work of general accuracy, as a Licentiate of the Edinburgh Royal College of Surgeons, 1822; and I knew, from personal experience, that his story was not improbable. I had myself lost one of my diplomas for a long time, and recovered it by the merest chance, and I had experienced the delay and difficulty arising out of an application for a duplicate or certificate, even when my application was supported by the powerful aid of my late friend Mr Liston. According to Mr Broatch's statement, it was simply *impossible* for him to comply with the *letter* of the requirement of the certificate, and yet it appeared that in a few days he must either be registered or professionally outlawed. I did not see Mr Broatch's diploma, but I firmly believed in his qualification; and as I regarded the certificate as intended to supply what the Act calls 'Proper evidence that the person claiming Registration is entitled to it,' I signed it, professional outlawry being the result in a few days if I had not. I do not seek to justify myself for so doing. It was incautious, an act of the feelings unsanctioned by the judgment and the dictates of self-interest, and I am very willing, and do express my regret. The circumstances you will be able to estimate as strongly as I can.

"I do not wish now to discuss the question of Mr Broatch's trial. I may only say, that so far from any desire on my part to defeat or assist in defeating the provisions of the Act, I immediately replied to the inquiries of the Registrar of the Scottish (Branch) Council, in perfect frankness, and had also to perform the painful duty of giving my evidence against Mr Broatch, without which, by the way, he could not have been convicted at all.

"Such are very briefly the facts of the matter referred to in the Minute published in the Edinburgh Journal.

"Of the publication of that Minute, in so far as it refers to me, I say nothing further than to remark that the Medical Act does not contemplate or authorize such a publication. The status and character of a medical man should not be injured wantonly, and it certainly was not intended that *ex parte* accusations should be circulated in the public journals under the shield of a minute of the (Branch) Medical Council, more especially before the said Council, by their own showing, knew whether they were entitled to entertain the subject or not; but, as I said before, I do not wish to trouble you with personal grievances or discussion.

"I have been anxious to state to you the circumstances under which I acted; having committed an error, I have desired to express regret. I feel sure you will pardon my intrusion in such a matter, and beg leave to subscribe myself, your most obedient servant, JAMES MURRAY MCCULLOCH.

"To Sir Benjamin C. Brodie, Bart.
14, Saville Row, London, W."

5. The following resolution was unanimously adopted by the Council, on the *motion* of Mr Green; *seconded* by Dr Andrew Wood:—"Having just learned that during this day's sitting, Dr Williams, the representative of the Royal College of Surgeons of Ireland, has died; under the unprecedented and afflicting circumstance the Council record the unfeigned sorrow which they feel under the irreparable loss of a colleague so estimable and distinguished."

Confirmed—B. C. BRODIE.

Minutes of Meeting, Wednesday, June 20th, 1860.

Sir BENJAMIN C. BRODIE, Bart., *President*, took the chair at three o'clock P.M. *Present*—Mr Green, Mr Nussey, Dr Bond, Dr Embleton, Dr Storrar, Dr Alexander Wood, Dr Andrew Wood, Mr Watt, Mr Syme, Dr A. Thomson, Dr A. Smith, Dr Leet, Dr Apjohn, Dr Corrigan, Sir James Clark, Sir Charles Hastings, Mr Lawrence, Mr Teale, Dr Christison, Dr Stokes—Dr Francis Hawkins, *Registrar*.

The minutes of the last meeting were read and confirmed.

1. *Moved* by Dr Stokes; and *seconded* by Sir Chas. Hastings:—"That the following letter be transmitted to the War Office."

General Medical Council, *June 20th*, 1860.

SIR,—In reference to your letter of the 4th of June 1860, No. $\frac{7609}{199}$, I have the honour to transmit the enclosed Resolution of the General Medical Council, passed at their meeting of June 19, 1860:—"That the General Medical Council having again carefully considered the subject referred to in the letter from the War Office, of 23d March 1860, addressed to the Secretary of the Apothecaries' Hall of Ireland, adhered to the opinion expressed by them in their Resolution of 9th August 1859, which is as follows: 'That it is the opinion of this Council that the licence of the Apothecaries' Hall of Ireland is not equivalent to a degree or licence in medicine from a University or College authorized to grant such, as, from a perusal of the Apothecaries' Act, 31 Geo. III., there does not appear to be any provision or authority for examining in medicine; and, further, that if a candidate be rejected by the Apothecaries' Hall of Ireland, the Apothecaries' Act, sec. 23, declares that the rejected candidate may appeal to the King and Queen's College of Physicians in Ireland, who are then authorized to reverse such decision, if it seem fit to them, and to grant to such appellant the right to practise the art and mystery of an apothecary without any examination in medicine.'" I am further directed by the General Medical Council to state that they would have been gratified to put their reply in more definite terms; but there appears to the Council to be considerable doubt as to what are the privileges or legal qualifications of the apothecaries of Ireland, and the Council cannot therefore give any authoritative opinion in reference to the value of their licence as a claim for admission to the competitive examination for the appointment of Assistant-Surgeon in the Army.—I am, etc.,

FRANCIS HAWKINS, *Registrar*.

Amendment, *moved* by Dr Storrar; *seconded* by Sir James Clark:—"That the letter from Mr Secretary Herbert, of the 4th of June, be again read."

Amendment *negatived;* original motion *carried.*

Dr Andrew Wood required that the names of the majority and minority should be entered on the minutes.

Majority.—Mr Green, Dr Bond, Dr Alexander Wood, Dr Andrew Wood, Mr Watt, Dr A. Smith, Dr Apjohn, Dr Corrigan, Sir Charles Hastings, Mr Lawrence, Mr Teale, Dr Stokes. *Minority.*—Mr Nussey, Dr Embleton, Dr Storrar, Mr Syme, Dr A. Thomson, Dr Leet, Sir James Clark, Dr Christison.

2. A petition from Mr John Broatch, accompanied by testimonials, was read, praying that his name might be reinserted in the Medical Register "As a Surgeon in the Public Service."

Moved by Dr Andrew Wood; *seconded* by Dr Storrar; and *agreed to*:—"That Mr John Broatch's petition to have his name restored to the Medical Register be not complied with."

3. *Moved* by Mr Syme; and *seconded* by Dr Alexander Wood:—"That the Medical Council having had their attention called to a practice prevailing in some of the English Medical Institutions, of requiring the London Apothecaries' Licence as an essential qualification, or paramount recommendation, for appointment to professional offices, resolve to record their opinion that this practice is neither consistent with the letter and spirit of the Medical Act, nor expedient for the interests of the public."

Amendment, *moved* by Mr Nussey; and *seconded* by Dr Leet:—"The Medical Council having no power to interfere with the practice said to prevail in the English Medical Institutions with respect to the qualifications they may require for their officers, such interference being wholly beyond their province, resolve, that it is not desirable or expedient to entertain the motion of Mr Syme."

Amendment *negatived;* original motion *carried.*

Mr Nussey required that the names of the majority and minority should be entered on the minutes.

Majority.—Dr Alexander Wood, Dr Andrew Wood, Mr Watt, Mr Syme, Dr A. Smith, Dr Apjohn, Dr Corrigan, Sir Charles Hastings, Mr Teale, Dr Stokes.

Minority.—Mr Green, Mr Nussey, Dr Bond, Dr Embleton, Dr Storrar, Dr Leet, Mr Lawrence.

4. Dr Alexander Wood read the following draft of a bill for the further amendment of the Medical Act, promoted by the Colleges of Physicians of London and Edinburgh, and assented to by the King and Queen's College of Physicians in Ireland :—

A Bill for the further Amendment of the Medical Act, 1858.

Whereas, by "The Medical Act, 1858," it is provided that it shall be lawful for her Majesty to grant to the Corporation of the Royal College of Physicians of London a new Charter, and thereby to give to such Corporation the name of "The Royal College of Physicians of England; and to grant to the Corporation of the Royal College of Physicians of Edinburgh a new Charter, and thereby to give to the said College of Physicians the name of "The Royal College of Physicians of Scotland;" and to grant to the Corporation of the King and Queen's College of Physicians in Ireland a new Charter, and thereby to give to such Corporation the name of "The Royal College of Physicians of Ireland;" but provision is not made by the said Act for reserving to the said Colleges, and the Presidents and Censors, Fellows, Members, Licentiates, and Extra Licentiates thereof respectively, by their said new names, the powers, privileges, liberties, and immunities to which they are respectively entitled by their existing names: and doubts have arisen whether, in case of the acceptance by these Colleges respectively of new Charters under such altered names respectively, the said powers, privileges, liberties, and immunities would legally attach and be preserved to them; and it is expedient that such doubts should be removed: And whereas, by the 47th section of the said Medical Act it is provided, that, within twelve months after the granting of such new Charter to the Royal College of Physicians of London, any Fellow, Member, or Licentiate of the Royal College of Physicians of Edinburgh, or of the Queen's College of Physicians of Ireland, who may be in practice as a physician in any part of England, and who may be desirous of becoming a member of such College of Physicians of England, shall be at liberty to do so, and be entitled to receive the diploma of the said College, and to be admitted to all the rights and privileges thereunto appertaining, on the payment of a registration fee of L.2 to the said College; and it is expedient that the said proviso should be repealed: And whereas, by an Act passed in the 14th and 15th years of the reign of King Henry the Eighth, intituled, "The Privileges and Authorities of Physicians in London," certain Letters Patent, dated the 23d day of September, in the 10th year of the reign of his said Majesty, whereby certain physicians in London therein named were incorporated by the name of "The President and College or Commonalty of the Faculty of Physic in London," were ratified and confirmed; and by the said Act it was enacted, that the six persons named in the said Letters Patent, and two more of the said commonalty, to be chosen by them, should be called Elects, and that the said Elects should yearly choose one of them to be President of the said commonalty, and that as oft as any of the places of the said Elects should become void, the survivors should choose and admit one or more, as need should require, of the said Faculty to supply the number of eight persons; and that no person should from thenceforth be suffered to practise in physic through England until he be examined by the said President and three of the said Elects, and have from them Letters Testimonial, except he be a graduate of Oxford or Cambridge: And whereas, the main function of the said Elects, viz., that of examining and granting Letters Testimonial, has been virtually superseded by the said Medical Act, and they have ceased to grant Letters Testimonial in accordance with the provisions contained in the last recited Act, and it is therefore expedient that the before recited provisions should be repealed: Be it enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:—

I. The expression in the Medical Act and this Act, "The Corporation of the Royal College of Physicians of London," or "The Royal College of Physicians of London," shall be taken to denote the Corporation of "The President and College or Commonalty of the Faculty of Physic in London."

II. Any new Charter, which, under the provisions of the Medical Act, shall be granted to the Corporation of the Royal College of Physicians of London, may be granted to them either by and in the name of the Royal College of Physicians of London, or, as provided by that Act, by and in the name of the Royal College of Physicians of England; and any such new Charter granted to the Corporation of the Royal College of Physicians of Edinburgh, may be granted to that College either by and in its present name, or, as provided by the Medical Act, by and in the name of the Royal College of Physicians of Scotland; and any such new Charter granted to the Corporation of the King and Queen's College of Physicians in Ireland, may be granted to that College either by and in its present name, or, as provided by the Medical Act, by and in the name of the Royal College of Physicians of Ireland.

III. The granting of new Charters to the said Corporations respectively, by and in the altered names and styles respectively, as provided in the Medical Act, shall not, in respect of such alteration of name or style merely, alter or affect in any way the rights, powers, authorities, qualifications, liberties, exemptions, immunities, duties, and obligations granted, conferred, or imposed to or upon, or continued and preserved to the said Corporations respectively, and the respective Presidents, Censors, Fellows, Members, and Licentiates thereof by the respective Charters and Acts of Parliament relating to the said Corporations respectively, or by the Medical Act, the Act to amend the Medical Act, the Medical Acts Amendment Act, 1860, and this Act respectively; but the said Corporations respectively, and the respective Presidents, Censors, Fellows, Members, and Licentiates thereof, shall, notwithstanding any such change of name and style, have and retain all such and the same rights, powers, authorities, qualifications, liberties, exemptions, and immunities, and be subject to all such and the same duties and obligations, as if such new Charters respectively had been granted to them by and in their respective names and styles as then existing.

IV. Each of the said Corporations shall also, notwithstanding any such alteration of name or style, have, hold, and enjoy, and continue to have, hold, and enjoy, all lands and other real and personal heritable and moveable property belonging to such Corporation, either beneficially or in trust, at the date of the granting of such new Charter, and may execute and perform any use or trust for the time being vested or reposed in such Corporation.

V. From and after the passing of this Act the before recited provision of the Medical Act, which entitles any Fellow, Member, or Licentiate of the Royal College of Physicians of Edinburgh, or of the King and Queen's College of Physicians in Ireland, to receive the diploma of the College of Physicians of England, and to be admitted to all the rights and privileges thereto appertaining, shall be, and the same is hereby repealed.

VI. So much of the Act of the 14 and 15 Henry VIII., c. 5, as relates to the Elects of the said Royal College of Physicians of London, and their powers and functions, shall be, and the same is hereby repealed; but this repeal shall not prejudice or affect the rights and privileges of any persons to whom the said President and Elects may have granted Letters Testimonial, and all trusts which, by any deed, gift, devise, or bequest are vested in, or to be executed or performed by the Elects, or some defined number of them, shall vest in and accrue to, and be executed and performed by the Censors of the said College for the time being, as if the names of the Censors had, in such instruments respectively, been used instead of that of the Elects.

VII. The office of President of the "Royal College of Physicians of London" shall be an annual office; and Thomas Mayo, Doctor of Physic, the now President of the said Corporation, shall remain such President until the day next after Palm Sunday in the year 1861, when he shall go out of office, and the Fellows of the said Corporation shall, at a meeting to be holden by them for that purpose, on the same day, and on the same day in every subsequent year, elect some one of the Fellows of the said Corporation in such manner as shall be provided by any bye-law or bye-laws made in that behalf by the said Corporation and for the time being in force, to be President of the said Corporation; but the retiring President shall always be capable of being re-elected, and every President shall remain in office until the actual election of a new President; or in case of the death, resignation, or other avoidance of any such President before the expiration of his year of office, the said Fellows shall, at a meeting to be holden by them for that purpose, as soon as conveniently may be (of which due notice shall be given), elect one other of the Fellows of the said Corporation, in such manner as aforesaid, to be President for the remainder of the year in which such death, resignation, or other avoidance shall happen, and until such election the duties of President shall be performed by the senior Censor for the time being.

Moved by Dr Alexander Wood; *seconded* by Dr Storrar; and *agreed to*:—"That the Council approve of the Draft Bill now read."

5. A communication from the Poor Law Board, in reference to qualifications for Poor Law medical appointments, was read.

Moved by Dr Andrew Wood; and *seconded* by Mr Lawrence:—"That the communication from the Poor Law Board be inserted in the minutes."

Amendment *moved* by Dr Corrigan; and *seconded* by Dr Embleton:—"That the Registrar be directed to thank the Secretary of the Poor Law Board for their communication and circular."

Amendment *carried.*

6. Letters from a medical practitioner in Jamaica, and from the Colonial Office, were read.

"Kingston, Jamaica, 25*th January* 1860.

"SIR,—As a Fellow of the Royal College of Surgeons of Edinburgh, duly registered under the British Medical Act, and practising the profession in this city, I take the liberty to address you as the member of the General Council of Medical Education and Registration, representing the College to which I have the honour to belong. I do so in reference to a Medical Registration Bill, a copy of which is enclosed, lately passed by the Legislature of this island.

"It would appear that this bill interferes materially with the rights and privileges of myself and of other practitioners of the island, who are registered under the imperial statute; and I must solicit your assistance in the General Council. to suggest such alterations in the construction of the Act as will render it harmless to all practitioners of the colony who are registered under the imperial law.

"You are aware that, according to the 31st section of the British Act, every person registered under it is entitled to practise the profession in any part of Her Majesty's dominions, and to demand and recover in any court of law, reasonable charges for services performed; but by the 13th section of the Jamaica Act, as you will perceive, no person can recover any charge in any court of law in the colony, unless he is registered under the provisions of the local statute. This, I submit, is an interference with the imperial Act, and nullifies the rights and privileges which are supposed to be conferred by it. The objectionable nature of the Jamaica Act is further shown in the 20th section, which would prevent the medical officers of the army and navy serving in the colony from giving testimony in any of the local courts of law,—would, in fact, ignore their qualifications as medical practitioners, and subject them to penalties, unless they chose to register under the island Act.

"This bill, although passed by the Colonial Legislature, has not yet received the assent of Her Majesty, and I beg that you will give the subject of it your attention, in order that the General Council may make a representation to Her Majesty's advisers, and effect such alterations in the bill as will prevent its clashing with the imperial statute, and hinder it from becoming vexatious and troublesome to those medical men who may come within the sphere of its operation.—I have the honour to be, etc.,

" ALEXANDER FIDDES.

" Dr Andrew Wood, President of the
Royal College of Surgeons, Edinburgh, etc. etc. etc."

Sections of the Jamaica Bill above referred to :—

XIII. After the first day of January, one thousand eight hundred and sixty, no person shall be entitled to recover any charge in any court of law for any medical or surgical advice, attendance, or appliances, or for the performance of any operation, or for any medicine prescribed, given, performed, or supplied, after the passing of this Act, unless he shall prove at the trial that he is registered under the provisions of this Act.

XX. Any person who shall wilfully and falsely pretend to be, or take or use the name or title of a Physician, or Doctor of Medicine, or Surgeon, Licentiate, or Extra Licentiate, or any other name, title, addition, or description, implying that he is registered under the provisions of this Act, or that he is recognised by law as a Physician, or Surgeon, or Licentiate, or Extra Licentiate, in Medicine and Surgery, or in Medicine or Surgery, or a Practitioner in Medicine and Surgery, or Medicine or Surgery, or an Apothecary; or who shall receive any fee or reward from any person for the performance of any service in any of the characters before mentioned, shall, upon conviction, pay a fine not exceeding twenty pounds, or be imprisoned in any prison, not being a county jail, for any term not exceeding six months.

" Downing Street, 30*th March* 1860.

" SIR,—In answer to your letter of the 14th instant, stating the objection of a Scotch medical practitioner in Jamaica to an island Act recently passed, to provide for registering duly qualified medical practitioners, I am directed by the Duke of Newcastle to inform you, that although the provisions of the Jamaica Act may not be in themselves unreasonable, they are considered to be repugnant to the English statute, and therefore the Colonial Legislature will be called upon to amend them before the Act can receive the royal assent.

" I return the copy of the Act which accompanied your letter.—I have the honour to be, etc., " C. FORTESCUE.

" Sir B. Brodie, Bart."

Moved by Dr Andrew Wood; *seconded* by Dr A. Smith; and *agreed to*:—" That the foregoing letters, and the 13th and 20th sections of the Jamaica Bill, be entered on the minutes.

7. *Moved* by Dr Christison; *seconded* by Dr Alexander Wood; and *agreed to*:—" That a committee, consisting of Dr Christison, Dr Alexander Wood, Dr Storrar, be appointed to extract from the minutes of Council such regulations as have been passed by the Council for conducting the business of the Council, and to report such alterations and new regulations as may appear to the committee to be advisable."

Confirmed—CHARLES HASTINGS.

THE LATE PROFESSOR JOHN LIZARS.

We lately recorded the death of this distinguished Edinburgh surgeon. When a man of note passes from amongst us, it is interesting as well as instructive, by a retrospective glance at the salient points in his professional career, to see how he has built up the great name which he leaves behind.

John Lizars was born in Edinburgh, and received his education at the High School of that city. Having resolved to enter the medical profession, he had the good fortune to become the pupil and apprentice of the well-known John Bell, the elder brother of the illustrious Sir Charles. Under a master so eminent at once as an anatomist and surgeon, it needed not be wondered at that young Lizars acquired that bent towards anatomy and surgery which determined his after-career. Having obtained his diploma in 1808, he passed several years as surgeon in the Royal Navy, serving on the Spanish and Portuguese coasts during the Peninsular war, under the command of Admiral Lord Exmouth. One of the warmest and most lasting friendships of his life was one which he then formed with Lord Napier, who was then captain of one of the ships in which he served.

Mr Lizars returned to Edinburgh in 1815, and was admitted a Fellow of the Royal College of Surgeons of that city; and in such esteem was he held by his former master, John Bell, that he was admitted into the partnership which then subsisted between Bell and Robert Allan, the well-known surgeon of that day, and author of "Allan's Surgery." Mr Lizars shortly began to lecture in the school with Allan, the latter giving the surgical lectures, while Lizars took the department of anatomy and physiology. In a few years the partnership was dissolved, and Mr Lizars lectured on anatomy alone at the Theatre, No. 1, Surgeon Square, which long maintained its reputation as a school of anatomy. Having made a position as a teacher of anatomy, in the course of four or five years he commenced to lecture on surgery also. To teach both sciences was no light matter either for mind or body. His method was as follows: first, a lecture on anatomy from eleven to twelve; secondly, a half-hour's demonstration on anatomy at one o'clock; and, thirdly, the lecture on surgery from two to three. This he did daily, Saturdays excepted; besides which, he had a large class of practical anatomy—a department, the conducting of which was then a much less easy or safe matter than it now-a-days proves to us, who have merely to receive bodies under the peaceful operation of the Anatomy Act. Mr Lizars' activity and success may be judged when we mention, that on each of his three classes there was an average attendance of about one hundred and fifty students. His success as a teacher may be said to have been due not only to his ability as an anatomist and surgeon, but to the great attention he paid to his pupils in the time he spent with them, and to the zeal with which he inspired them.

When the Edinburgh College of Surgeons, leading the van in the improvement of medical education, resolved to recognise each teacher for one science only, Mr Lizars naturally chose surgery, resigning his class of anatomy to his brother Alexander, who soon became known as a successful teacher in Edinburgh, now the well-known Professor of Anatomy in the University of Aberdeen. In 1831, John Lizars was appointed Professor of Surgery to the Royal College of Surgeons on the resignation of Mr Turner, who became the first, but short-lived, Professor of Surgery in the Edinburgh University. Mr Lizars continued to lecture as Professor of Surgery till 1838–39, when he retired from the duties of the lecture-room and the hospital. The hospital appointment he had held for only some five or six years, under an unhappy regulation then in force in the Edinburgh Royal Infirmary, which allowed of but short appointments. However important a more lasting hospital appointment may be, it will prove consolatory to those who, from want of friends, or jealousy, or other circumstances, have been unable to gain such an appointment, to see from Mr Lizars' career that even a surgical reputation may be made before, and maintained after, it has ceased.

A signal proof of Mr Lizars' industry and devotion to the science of surgery, was presented in the large number of anatomical and pathological specimens which he collected from the field presented by his practical rooms and his private and hospital practice. These, with scarcely any exceptions, were prepared by himself. The anatomical museum went to his brother Alexander, with the anatomical class; and when he retired from teaching surgery in 1839, his large and truly valuable surgical museum passed into the possession of Dr Handyside, who succeeded him as lecturer on surgery.

Mr Lizars' reputation as a teacher was made and maintained at a time when there was no lack of competitors and contemporary lecturers of great talent and fame. Amongst these were Barclay (who was still in the field), Mackintosh, Fletcher, Argyll Robertson, Knox, John Reid, and, as colleague at the hospital, there was Liston. Liston and Lizars taught and operated side by side, rivals and yet friends; for they were too much of a kind not to respect each other. A really great man may fail to be recognised from the mere accidental presence of a greater; as we have heard an anatomist say, the gluteus medius would have been regarded as a large muscle but for the presence of the maximus. To operate in the same theatre with Liston, and before the same students, was the severest trial to which a reputation could be subjected. But neither of these eminent men threw the other into the shade. Mr Lizars could be equalled as an operator, but could not be surpassed. He had the ease and trust brought by that thorough familiarity with anatomy which years of teaching in the dissecting-room can alone supply, and a rich endowment of that natural coolness which is to the surgeon what natural bravery is to the soldier. None who witnessed it are likely to forget the coolness and dexterity with which he performed the then laudable but anxious experiment of exposing and tying the innominate artery; no one, probably, of the large and eager audience so cool as the operator himself. It will be remembered, too, that surgery is indebted to him for the introduction of the operation of removal of the upper jaw.

Mr Lizars also contributed to advance the sciences of anatomy and surgery by his numerous writings. Besides his lesser writings, "On the Extraction of Diseased Ovaria," "On Club-Foot," "On Strabismus," and "On Stricture," he published his well-known "System of Practical Surgery," and his large anatomical work, the "Anatomical Plates." The engravings in the latter work were made chiefly from original dissections, with great care, and at much expense. The work was altogether a magnificent one in its day, and had an immense sale; and although the increased facilities for dissection have rendered all such works less necessary than in former times, it is still, notwithstanding more modern competitors, a valuable work of reference for the student and surgeon.

Retiring from the position of teacher, which he had so long and so successfully held, Mr Lizars devoted his time to private practice, surgical and general, with occasional appearances as an author, and thus spent the last twenty years of his life. He continued these active duties till the end. He had been out as usual on the forenoon of the 20th of last month; but, feeling drowsy, returned home. Symptoms of insensibility gradually supervened and increased, and without any return of consciousness he died on the following evening,—thus ending a long, active, and useful career with a short illness and painless death.

It may be well, in concluding this brief notice of Mr Lizars' career, to call the attention of the young members of the profession to the circumstance, that the success and eminence which he attained he owed solely to himself. With no aids but those of his native talent and education, and his continued industry, he rose rapidly in the confidence of the profession and the public, and has left behind him a lasting name amongst the great ones of surgery and of the northern metropolis. To his many pupils, now scattered over the world, the news of his death will come with that sadness with which one hears that an old and favourite teacher has passed away, breaking another of the links which bound them to the past; and to them the incidents and the names to which we have referred will stir many deep and interesting memories of bygone days.—*The Lancet.*

THE LATE DR M. S. BUCHANAN.

So well-known a citizen, and so worthy a man, cannot be allowed to pass away without a few words beyond the mere customary announcement of his death. Born and bred in Glasgow, in a well-known family, he began his medical studies there in 1812, graduated in Edinburgh in 1818, and after travelling in France and Germany, was in 1829 appointed surgeon to our Royal Infirmary, an office which he held at intervals for many years. In 1841 he was appointed to the lectureship of Anatomy in Anderson's University, where he taught with his latest breath. As a surgeon, Dr Buchanan was an excellent operator, and a most popular clinical teacher; but it was in the Chair of Anatomy that he chiefly shone. Here his zeal knew no bounds, and his success exceeded his most sanguine hopes. From the first he had large classes, which went on steadily increasing; and there can be no doubt that his energetic enthusiasm was the principal cause of the popularity and extension of the Extra-Academical Medical School of Glasgow. His enthusiasm in his profession did not prevent him from taking an active interest in matters connected with education and religion. He was long ago one of Dr Chalmers' elders in St John's, and never ceased to do what he could for the best interests of his fellow-citizens.—*Glasgow Herald.*

THE LATE MR W. O. ROBERTS, ASSISTANT-SURGEON, R.N.

We regret to announce the unexpected death of this promising young medical officer, which took place at Colaba, near Bombay, on the 14th May last. Mr Roberts was the eldest son of Dr Roberts, surgeon-dentist, Edinburgh. He took the diploma of the Edinburgh College of Surgeons in 1855, and immediately afterwards entered the Royal Navy, with which he has been almost constantly engaged in foreign service in India and China. He was present in the expedition of Lord Elgin up the Yang-tzse-Kiang river to Hankow, and to his pen the public were indebted for many of the graphic and characteristic descriptions, which appeared in the newspapers, of events in China during the late war. One of his more recent communications contained an interesting account of the laying down of the telegraphic cable between Kurrachee and Aden, at which he had assisted. By his amiable disposition and ready talents, Mr Roberts had endeared himself to a large circle of friends, by whom his loss will be deeply regretted. His remains were interred in the burial ground of Colaba with military honours; and his brother officers, in testimony of their esteem, have ordered a suitable tablet to be erected over his tomb.

VARIETIES.

Royal Society.—At the meeting of the Royal Society, on the 7th June, Mr Lister, Professor of Surgery in the University of Glasgow, had the honour of being elected a Fellow. The number of persons recommended for admission was restricted to fifteen; and for this honour there were no fewer than forty-seven candidates. Professor Lister's claim to this distinction was founded on his well-known researches and discoveries on the pathology of inflammation, which have been published in the Society's Transactions. The eminent physiologist, Dr Brown-Séquard, has also been appointed a Fellow of the Royal Society.

Changes in the Medical Council.—Dr Watson has resigned his seat as representative of the Royal College of Physicians of England, and has been succeeded by Dr Burrows.—Dr James Watson, of Glasgow, who represented the Faculty of Physicians and Surgeons, has also resigned, in consequence of ill health, and Mr George Watt has been appointed in his room.—We regret to have to record the death of Dr Robert C. Williams, representative of the Royal College of Surgeons of Ireland, which has taken place during his attendance at the present meeting of the Council.

PUBLICATIONS RECEIVED.

Beaney—Original Contributions to the Practice of Conservative Surgery. By James G. Beaney, M.R.C.S.E., etc., etc. Melbourne, 1859.

Collinson — Small-Pox and Vaccination, Historically and Medically Considered. By Alfred Collinson, M.D. London, 1860.

Lee—Additional Notes Corroborative of the Remarks on the "St George's Hospital Medical Staff." By Edwin Lee, M.C.D., M.R.C.S., etc., etc. London, 1860.

Ward—Rational Medicine: its Position and Prospects. By Stephen H. Ward, M.D. Lond., M.R.C.P., etc., etc. London, 1860.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*On the Determination of the Proportion of Solids in the Urine of Health and Disease.* By WILLIAM SELLER, M.D., F.R.S.E., Fellow of the Royal College of Physicians of Edinburgh.

OF late, my attention has been drawn to the modes of estimating the proportion of solid matter in the urine. There are still attendant on the reduction of the urine to dryness, great practical difficulties; and, respecting the proper rule for solving the problem by reference to the density of the urine, there are conflicting views among the best authorities.

I propose to offer a few observations bearing on each of these two methods; and first, of that which rests on the density.

It will be remembered that the three best-known proposals for finding the proportion of solids in the urine from the density are, to multiply the number denoting the excess of the density above 1000, 1st, by the number 2; 2dly, by a number less than 2 (1·65); 3dly, by a number greater than 2 (2·33).

This mode of proceeding rests on the circumstance, that when soluble matter is added to water, the solvent commonly, yet not always, undergoes an expansion.

If there be no expansion, there is no need of a multiplier—the excess of the density above 1000 signifies the amount of the soluble matter present. If the expansion expressed in water-grain measures be found to be equal to the excess of the density above 1000, represented by weight in grains, then the multiplier 2 will give the amount of soluble matter contained in the solution. For example, in the 1000 grain specific-gravity bottle, let 50 grains of soluble matter, the mean expansion caused by which is 25 water-grain measures, be dissolved in 975 grains of distilled water, the bottle will be exactly filled, and the specific gravity, which here corresponds with the actual weight, will be 1025. But 25, the excess of the density or specific gravity above 1000, multiplied by 2, gives the whole amount of solid matter, viz., 50 grains. Parallel to this is every case in which the expansion is equal to the excess of density above 1000. And thus, that form of the rule under consideration which makes 2 the multiplier, proceeds on the assumption that the number denoting, in water-grain measures, the mean expansion caused in water by the solid matter of the urine is equal to half the amount of that matter expressed by weight in grains.

When, again, 1·65 is used as the multiplier, the method proceeds on the assumption that the expansion is to the excess of density above 1000, very nearly as 2 to 3, or is equal to two-fifths of the number denoting the weight of the soluble matter present.

Lastly, when the multiplier is made 2·33, the assumption exists that the expansion is to the excess of the density above 1000, nearly as 4 to 3, or is almost equal to four-sevenths of the number denoting the whole amount of solid matter present.

The truth of these statements is indisputable, provided it be admitted that a fixed weight of soluble matter of one kind creates the same amount of expansion during solution, whatever be the proportion of water. And though this proposition cannot be assumed as true without exception, yet it is certain that exceptions take place only to a small extent, chiefly when the point of saturation is approached.

It should be observed, as flowing from what has been affirmed above, that the number expressing the weight in grains of a salt present in solution, is made up of the excess of density above 1000, together with the number denoting the expansion in water-grain measures. Thus, when the specific-gravity bottle is filled with a solution weighing 1020 grains, the quantity of water present, if there has been any expansion at all, must be less than 1000 grains by the number of water-grain measures denoting the expansion; that is, the whole quantity, 1020 grains, is made up of the quantity of soluble matter, together with 1000 grains of water minus the number expressive of the expansion.

It should be remarked also, that, owing to the expansion being so uniformly constant for the same weight of a salt, whatever be the proportion of water, we reduce the specific gravity of a solution—for example, from 1050 to 1025—not by adding a volume of water equal to that which the solution is estimated to contain, but by adding a volume of water equal to that of the solution itself. Thus, 1000 grain-measures of urine of specific gravity 1030 may be found to contain no more than 970 grains of water; yet its specific gravity is reduced to 1015, not by adding other 970 grains of water, but by adding to it an equal volume, or 1000 grains, of water.

It should also be remarked, as flowing similarly from what has been affirmed above, that, for example, if four waters be poured upon a salt, and then four waters more, and so on in succession for a number of times, the solutions obtained will not present such a uniformly decreasing specific gravity,—that such a scale of decrease is obtained only when the successive quantities of water added are each equal to the first quantity, together with the expansion which took place while in the first instance the salt was taken up. Thus, if 250 grains of nitrate of potassa are dissolved in 1000 grains of water, the expansion amounts to nearly 90 water-grain measures; so that the quantities of water to be added in succession to produce such a uniformly decreasing scale of density are, not 1000 grains, but 1090 grains each.

So much, then, for the principles on which the necessity for a multiplier rests.

We have next to consider the practical application of these principles to the case of the urine.

Of the practical rules before referred to, that most in favour in this country at present is the one proposed by Dr Christison, not for the urine in general, but for the special highly dense urine of diabetes—that, namely, by which 2·33 is made the multiplier. While many adopt this rule implicitly, like Dr G. Bird, who has founded two extensive tables upon it, others qualify it by the rule wherein the number 2 is made the multiplier, which they recommend when the density of the urine is lower in the scale, while they take Dr Christison's rule only when the specimen of urine under examination is of high density. The third rule, that in which 1·65 is made the multiplier, was proposed by the eminent French observer, Becquerel. This last rule, however, has been, of late years, thrown entirely out of English books on the authority of Dr Day, who, in an elaborate paper, has laid down Dr Christison's rule as that most applicable to all kinds of cases.

The evidence on which each of these rules has been supported by their respective partisans, is the actual amount of solid matter obtained from numerous specimens of urine of known density. The objection to this evidence is the discrepancy in the results described by different observers,—which discrepancy is manifestly dependent on the difficulty of getting the solid residue perfectly free from water.

I am not aware that any one has hitherto attempted to try the merits of these several rules by the particular properties of the known constituents of the urine. This kind of inquiry, however, does not appear unworthy of attention. The plan of such an investigation I shall endeavour to suggest and follow out, as far as materials exist for the purpose.

The solid matter of the urine in health admits of a threefold division, namely, into—1, urea; 2, organic matters other than urea; and 3, inorganic saline substances. The proportions under these several heads, in many standard analyses of the urine in health, approach to an equality. Thus, in the analysis given by Miller in his *Chemistry*, the proportion of urea in 1000 parts of urine of specific gravity 1020, is 14·23; that of organic matters other than urea is 15·56; and that of inorganic saline substances is 13·35; while the proportion of water amounts to 956·80. Thus it may be allowed to us to assume, as a convenient diagram of the constitution of the urine, that the proportion in each of these divisions is equal, say 15 of each in the thousand parts. Such a diagram will stand thus:—Urea, 15; organic matters other than urea, 15; saline substances, 15; water, 1000, less the amount of expansion; while the specific gravity will hardly exceed 1020. It is obvious that, were the medium expansion created in water by such a proportion of each of those divisions ascertained, a considerable step would be gained towards determining which of the multipliers before referred to should in general be preferred.

It is only in the case of the saline substances commonly believed to be present in the urine, that any evidence has hitherto existed with regard to the amount of expansion produced during their solution. When a substance can be obtained in a state of purity, nothing is easier than, within moderate limits of accuracy, to determine its property in this respect; for no more is necessary than to put a certain quantity of the substance into the thousand-grain specific-gravity bottle, and to fill it up with distilled water, then weigh the whole. It is manifest that the difference between the entire weight and the weight of the soluble substance put in is equal to the quantity of water present, and that the difference between the quantity of water and 1000 is the amount of expansion in water-grain measures. In this way I find that 30 grains of pure urea cause an expansion equal to 22 water-grain measures.

With respect to the organic substances other than urea, the small proportion of each, together with the difficulty of procuring most of them in a state of purity, has prevented me from making any direct observations as to their effect on the expansion of the solvent during solution. But it is evident that, in an exact analysis of the urine supplying the means of determining the effect of the urea and of the several inorganic saline substances on the expansion of the solvent, the means are furnished of inferring the expansion created by these organic substances in the aggregate.

Unfortunately, few recent analyses of the urine are of a kind to assist the mode of investigation here suggested; because it is not common, of late, to attempt to fix the exact proportions in which the several saline substances are present. The well-known analysis of Berzelius, now so time-honoured, is almost the only one I can find suitable to my present purpose. It is certain that no analysis has yet appeared fit to take the place which it has held so long. The only considerable defect in it is, that the specific gravity of the specimen of urine from which it was taken is not stated. It is less material that the organic substances other than urea and uric acid are not named in accordance with present views.

The proportion of solids to the water in this analysis is remarkably high, being 67 to 933 on 1000 parts by weight, or, in round numbers, 70 grains in 1000 water-grain measures of urine. If the specific gravity be sought by the converse of the rule so often referred to—that is, by dividing the quantity of solids present in 1000 water-grain measures by one of the three numbers, 1·65, 2, or 2·33—the answers will be respectively 1043, 1035, and 1030. The first number, 1043, is certainly considerably above any specific gravity which we are accustomed to meet with during health in this country. Nevertheless the case may be different in Sweden. As to 1030 and 1035, they are by no means uncommon as characterizing the urine of particular parts of the day, chiefly when the urine is very slowly secreted. The chief peculiarity, besides, in this analysis is the large proportion of urea. It has, however, been remarked, that the slow secretion of the urine with a small proportion of water is the circumstance most favourable to the elimination of an unusually large proportion of urea. And it is probably this same circumstance which has given rise to the prevailing idea, that it is the large proportion of urea which principally contributes to a high specific gravity of the urine. The truth, however, is, that when the urine has a high specific gravity in health, there is an abundance of urea; but it is not the abundance of urea which chiefly contributes to that high density, for even 70 grains of urea, contained in 1000 grain measures of its simple solution, give rise to a density no higher than 1019. There is thus no reason to doubt that this analysis correctly represents a genuine specimen of healthy urine.

First, then, of the inorganic saline substances in this analysis. These salts are the sulphate of potassa, the sulphate of soda, the phosphate of soda, the phosphate of ammonia, the chloride of sodium, the hydrochlorate of ammonia, earthy matters with a trace of fluoride of calcium and siliceous earth. The two last particulars being omitted, the sum of these salts in the analysis is 17·41, and the sum of the expansion which they create in water during their solution, calculated from data obtained, for the most part, from authentic chemical sources,[1] is 7·26 water-grain measures. Thus, a solution of these salts in 992·74 grains of water would yield 1000 water-grain measures of a fluid having a specific gravity of 1009·15. If this fluid were a true type of the urine, the two lower multipliers would give a more correct indication of the amount of solids present than the highest; for 9·15 multiplied into 2·33 give 21·31—an excess of nearly 4 grains above the quantity of salts present, viz., 17·41.

But urea, which in the analysis under consideration is present in large proportion, produces a very different effect on the urine from these salts. It was stated above, that 30 grains of urea create an expansion during solution equal to 22 water-grain measures. Thirty grains of urea being the quantity stated in the analysis in 1000 grains of urine, there is more than 30 grains in 1000 water-grain measures of urine; and, therefore, the expansion due to it is correspondingly greater than 22 water-grain measures; but that small difference may be left out of view. If, then, the fixed salts (17·45 grains) and the urea (30 grains), together 47·45 grains, are dissolved in water, the sum of their expansion is (22 + 7·26) 29·26; so that 970·74 grains of water will suffice to produce a solution 1000 water-grain measures in volume. The specific gravity of this solution is 1018·19; and even the highest multiplier, 2·33, fails to bring out so large a quantity as the solids present are equal to; for 2·33 × 18·19 are only equal to 42·38, the multiplier required being 2·6, since 18·19 × 2·6 = 47·29.

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[1] See, in particular, Playfair and Joule in *Philosophical Magazine*, vol. xxvii., December 1845.

We have next to consider the effect of the organic matters other than urea. Here the uncertainty of the specific gravity creates a great difficulty. Thus, were we sure that the specific gravity is 1030, the aggregate of the expansion produced by the three divisions of the solids would be known, since it is the whole amount of the solids diminished by the excess of the density above 1000;[1] or it is 70 − 30 = 40. Hence it would at once appear that the expansion created by 18·46 organic substances other than urea amounts to 10·74, or the difference between 40 and the expansion already seen to belong to the sum of the urea and the inorganic salts, namely, 29·26.

Since, however, this uncertainty as to the specific gravity of the specimen of urine under consideration prevents any trustworthy inference as to the effect of the organic matters of the urine other than urea in the expansion of the solvent, recourse must be had to some other analysis in quest of such information.

In Miller's analysis, the amount of fixed salts, 13·35, gives rise to an expansion of no more than one-third, $\frac{13\cdot35}{3}$, or 4·45, while 14·23 parts of urea create an expansion of 10·43,—the joint expansion, therefore, effected by the fixed salts and the urea is 14·88. The whole quantity of solid matter in this specimen of urine is 43·2, and the specific gravity is 1020. The total expansion is discovered by taking the excess of the density above 1000, namely 20, from the whole quantity of the solids, 43·2,[2] when there remains 23·20. But this last number being diminished by that denoting the joint expansion produced by the fixed salts and the urea, namely 14·88, there remain 8·32 as indicating the expansion attributable to the organic substances other than urea, which amount to 15·56. But 15·56 : 8·32 : : 18·46 : 9·86. Thus there is deduced from Miller's analysis a number, 9·86, expressive of the expansion due to the 18·46 of organic substances other than urea contained in the analysis of Berzelius,—a number differing in a very slight degree from that, namely, 10·74, inferred from the assumption of 1030 as the specific gravity of that specimen of urine.

We may regard it as proved, then, that the true specific gravity of the specimen of urine to which the analysis of Berzelius applies is 1030. And it should be observed, also, that the highest multiplier, namely, 2·33, gives a nearly exact result as to the whole quantity of solids present; for $30 \times 2{\cdot}33 = 69{\cdot}90$, or, as nearly as possible, 70,—the round number assumed above as denoting the quantity of solids present in 1000 water-grain measures of this specimen of urine.

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[1] See page 106.

[2] See page 106.

It must be confessed, however, that little progress can be made towards determining by this method which multiplier deserves the preference, until many trustworthy analyses of the urine, as it exists under different circumstances compatible with health, can be procured on the exact plan adopted by Berzelius. In the meantime, some progress might be made, at no great cost of trouble, if those who have leisure were to accumulate information by determining the exact proportion of urea and of inorganic salts in a number of specimens of urine. It is easy to determine the proportion of urea by the method of Liebig, to which I endeavoured to draw attention in a recent number of this Journal;[1] and it is a work of no great difficulty, to those who have time on their hands, to determine the amount of inorganic salts. Thus, if the urine be reduced by heat to the consistence of syrup, and pure nitric acid be added to the extent of 4 or 5 per cent. on the original quantity of the urine; if the evaporation be continued till the whole will solidify on cooling; and, lastly, if portions of the mass be projected into a red-hot platinum capsule, the fixed salts will be obtained in the form of a white mass. It is true that, after we have ascertained the proportions of urea and of the fixed salts, we cannot discover the proportion of the organic matters other than urea unless we know the whole amount of solid matter present. But of an easy method for this purpose I am going to speak before closing this paper.

Before leaving this subject I will only add a single illustration, by way of showing the point from which any further investigation must set out. Let us recur, then, to the diagram of the constitution of the urine in which the solid matter was regarded as falling under three divisions, in each of which the proportion was held to be 15, while the amount of the solvent was taken at 1000, less the total expansion. Of the amount of expansion produced by these several divisions, there is no certainty except in the case of that consisting of urea. With respect to the expansion produced by the other two divisions, though a figure can be produced by calculation for each, yet, owing to the insufficiency of the data, these numbers must be regarded as merely provisional. For every 15 parts of urea dissolved, it is certain that the expansion is nearly 11; for every 15 parts of organic substances other than urea, the provisional number denoting the expansion is 9; and for every 15 parts of inorganic salts, the provisional number denoting the expansion is 5.

Let us first attend to the result when the formula is used without change on these numbers. If 15 parts of each of the three divisions of constituents be together dissolved in 975 parts of water, the aggregate of the expansions is 25, so that the solution occupies 1000 water-grain measures. The total amount of solid matter is 45, from which the specific gravity may be deduced by subtracting from it the number denoting the entire expansion, $45-25=20$, which is the excess of the density above 1000. Or the specific gravity in this case is discovered by estimating the total weight of the solution, thus:—Water, 975; solids, 45—sum of both, 1020. Here the excess of the density above 1000 is 20; which number, with the highest multiplier, gives a product somewhat in excess of the amount of the solid matter present, $20\times 2{\cdot}33=46{\cdot}60$.

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[1] See Number for January 1859. Liebig's quantitative test of urea is prepared by Messrs T. and H. Smith, 21, Duke Street, Edinburgh, and 69, Coleman Street, London.

If 6 parts of urea and 15 parts of each of the other two divisions be dissolved, the aggregate of the expansions, viz., 4·3, 9, and 5, amounts to 18·3; which number, taken from the entire sum of the solid matter, namely, 36, gives 17·7 for the specific gravity. Here, then, the number 2, as multiplier, gives very nearly the actual quantity of solid matter present. Again, if 34 parts of inorganic salts, 8 parts of urea, and 4 parts of organic matter other than urea, be dissolved, the total expansion is nearly 18 (nearly 11, 4·7, and 3), which, taken from the whole amount, 46, leaves 28 for the specific gravity. But 28 gives, with the least multiplier, 1·65, very nearly the exact amount of solids present, viz., 46·48. If, then, the above diagram of the general constitution of the urine be found to come near the truth, and if the numbers adopted be discovered, on further investigation, to express nearly the average expansion created by the organic matters other than urea and the inorganic salts, the highest multiplier, 2·33, proposed by Dr Christison and extended by Dr Day, is that which decidedly deserves the preference.

The conclusion to which many will be disposed to come, from what has been advanced in this paper, will probably be, that the settlement of the point at issue is not of sufficient utility to deserve so much trouble. It may be so; but the inquiry itself, independently of the result, cannot but lead to the accumulation of useful details on a subject of growing importance in practice.

For example, I do not find that attention has been anywhere drawn to the remarkable effect of urea in creating expansion of the solvent during its solution. The sugar of grapes, commonly regarded as identical with the sugar of diabetes, has, I find, a similar property—the sugar of grapes, dissolved to the extent of 50 grains, gives an expansion equal to 30 water-grain measures. Cane-sugar has nearly the same effect.

With regard to the mode of determining the specific gravity, it appears to me that an urinometer with a properly constituted scale, the requisite attention being given to variations of temperature, is sufficient for all purposes connected with practical medicine. It should be seen to that the scale is properly graduated. I observe a very singular reason, given most unaccountably both by Golding Bird and Thudichum,[1] for the inequality of the degrees of the scale, namely, that "the density of each stratum of fluid in which the instrument is immersed, of necessity increases with the depth from the surface." The degrees of the scale are necessarily unequal, because each is the sign of a new proportion; since the volume of the portion of the instrument immersed is in the inverse ratio of the density of the fluid into which it has been plunged. If any further reason be required, I should venture to say that the higher the urinometer stands out of the fluid, the greater is the pressure, owing to the difference of weight in water and in air, with which it resists the buoyancy of the part immersed, so as to render the degrees shorter in proportion as these approach the lowest part of the stem.

I lately extemporized an urinometer, on the plan of which a convenient instrument might, I think, be made. I took a small pipette, and, having closed the lower aperture by the gas flame, I put a sufficient quantity of mercury into the interior to cause the instrument to sink perpendicularly below the level of the bulb. The pipette now floated, in pure water, perpendicularly with the water-line, nearly midway between the bulb and the upper extremity. I then fixed a thin slice of a common cork on the upper end, so as to form a small table on which weights might be laid. I also passed a wire with a slender point perpendicularly through the cork till it touched the surface of the water, to serve for an exact index to the height at which the instrument stood in the water. When this rude instrument was placed in a fluid denser than water, it rose, of course, throwing even a portion of the bulb above water; but, by placing weights on the little cork table, it was made to sink to the level at which the point of the wire grazed the surface of the water. Since by this means the same bulk of fluid is evidently always displaced, whatever be the density and whatever the temperature at the time, provided the weights on the little cork table are adjusted to keeping the point of the perpendicular wire just grazing the surface of the fluid, those weights will exactly indicate the difference between a given bulk of distilled water and the same bulk of any denser fluid. Whatever be the temperature at the time, the index for distilled water is shifted to answer for that temperature. If the bulk of fluid displaced by such an apparatus be not known, all that is requisite, for example, in the case of the urine, is to immerse the instrument in a fluid known to have a density of 1060, and to ascertain how many grains suffice to sink the point of the wire to the surface; and the product of this number divided by 60 will answer to the weight required for each degree between 1000 and 1060. Here there is no inequality of degrees. The sixtieth part of the difference between the weight of the volume of distilled water displaced, and the same volume of the standard fluid at 1060 equally displaced, corresponds to a degree. I find it convenient to use pieces of thin lead-wire in such experiments, owing to the facility with which these can be adjusted to any weight. Such an instrument, of course, is better suited to the study than to the sick-chamber.

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[1] Bird, *Urinary Deposits*, 4th edition, p. 45. Thudichum *on the Pathology of the Urine*, p. 34.

With respect to the determination of the proportion of solid matter in the urine by evaporation to dryness, it has long been manifest that the difficulty of the ordinary methods place them entirely beyond the reach of medical men for practical use. A mode, however, occurred to me some time ago, which I have repeatedly put to trial. This mode is, I think, susceptible of very great accuracy, and at very little cost of time. It must be confessed, nevertheless, that without due precautions, it may lead into very considerable errors. It is founded on so simple an observation as that common filtering paper readily takes up a large proportion of urine, and, under favourable circumstances, dries in no long time. The only considerable source of error is the difficulty of bringing back the paper to exactly the same hygrometric state in which it was at the beginning of the experiment. The paper is to be carefully weighed before being moistened, and weighed again with the same care after it has become dry—the difference in weight is the amount of the solid matter in the quantity of urine employed. For 1000 grains of urine, or rather for 1000 water-grain measures of urine, I have commonly used three sheets of filtering paper, cut each into four pieces. The urine is poured into a well-dried basin, and each piece is moistened in succession, as far as it will bear without dripping; enough being left unwetted at its upper part to allow of a fold, by which it may be hung on a string or wire to dry. For this effect a few hours suffice. If the temperature and hygrometric state of the apartment can be kept uniform during the whole process, there is plainly no difficulty; if the drying be carried too far, there is an error of deficiency in the amount of the solids inferred; if the drying be insufficient, or if the apartment has declined in temperature, or its hygrometric state has become greater, there is an error of excess. It should be remembered that the paper, though apparently dry, readily absorbs moisture, owing not only to its original tendency, but to the deliquescent character of the solid matters contained in the urine.

EDINBURGH, 2*d July* 1860.

ARTICLE II.—*Notes on the Baths of the Salzkammergut, and on the Route to Vienna by the Danube.* By A. MERCER ADAM, M.D., Edin., late Physician to the Dumfries and Galloway Royal Infirmary.

(*No. VII. of "Medical Notes from the Continent," continued from* p. 35.)

THE SALZKAMMERGUT, AND ISCHL.

WE have now left Munich, and are *en route* for Vienna. Our route thither lies through the *Salzkammergut*, or Austrian Switzerland,—a district of surpassing loveliness, which, as yet, is comparatively unknown to the travelling English. If the reader will honour us with his company on our journey, we promise him some pleasant wayside pictures, and engage to be his guide to several places which are very interesting in a professional point of view. Some may object to the introduction of sketches of Tyrolese scenery, life, and manners, in the pages of a medical publication. I answer, in defence, that as my remarks on Ischl, and other watering-places in the district, may possibly induce some of my professional brethren to send their patients, or to go themselves thither, in search of health and relaxation, I have thought that a little information concerning the places and the people might be of service.

From Munich we go by rail, in the cool of the evening, to Rosenheim,—a pretty little town on the Bavarian frontier, situated in a picturesque valley at the junction of the Inn and Mangfall rivers. Here we are to meet the *Lohnkutscher*, or German Vetturino, whom we engaged in Munich to drive us through this part of the Tyrol, and who has come on in advance, with all our heavy luggage. There is no pleasanter mode of travelling through fine scenery than in a *vetturino* carriage such as this. It is a large roomy vehicle, drawn by two, sometimes by three or four horses. In fine weather it is covered at the top to afford protection from the sun, and open at the sides to admit the breeze, and allow the scenery to be advantageously viewed. It can be completely closed in, and made very comfortable in the event of wet or stormy weather overtaking us among the mountains. Our heavy luggage is strapped on to the back of the carriage, while our smaller articles are stowed away in the recesses of a capacious hind-"boot." Our *kutscher* is George Gesselhofer,[1]—a good-humoured Bavarian, who is thoroughly acquainted with every pass and peak in all the Tyrol. The carriage and its driver are entirely at our service; we can halt when and where we please, and enjoy the most perfect freedom of action in every way. Our agreement with the driver is, to give so much per diem; and he is to pay all tolls, extra post-horses, and stable-expenses, as well as to board and lodge himself by the way, so that we have only ourselves to cater and care for on the journey.

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[1] To be heard of at the *Baierischer Hof* (an Hôtel we can highly recommend) in Munich.

At Rosenheim we pass the night in a clean but homely village inn, with queer rambling wooden galleries meandering along its sides, such as used to exist in some old English hostelries, but can now be seen only in Hogarth's pictures. As we mount the main staircase to our bed-room, we notice a gigantic crucifix on one of the landings, having kneeling-stools before it, for the use of any piously-inclined travellers. The quaint old landlady, who is our guide, crosses herself reverently as she passes the sacred image; and then she leads us to a bed-chamber,—where there are little holy-water vessels, and pictures of the Blessed Virgin on the walls. "Good-night, and holy angels guard your bed!"—and with this pious greeting, she curtseys and disappears. Her piety is evidently sincere; for the natives of the Salzkammergut, and of the Tyrol generally, are simple-minded people, thoroughly imbued with deep devotional feelings;—in fact, they are probably the most truly pious people in Europe. External influences have operated powerfully in forming this frame of mind. Living in scattered villages, or in lonely châlets, in the depths of Alpine valleys, or on the sides of mountains, where their dwellings are overshadowed, as it were, by sombre pine-forests and overhanging glaciers,—their minds become solemnized by the awful grandeur of the scenes among which they pass their existence. They are constant witnesses of the most sublime phenomena of nature; and their property and their lives are often destroyed by the rage of the elements, or by unforeseen accidents. The sudden winter-flood may carry away a cottage and its inmates; the sweeping avalanche may bury one of their villages in ruins. The father or brother may be struck down by a thunderbolt, or killed by the unexpected descent of some immense pine, which his comrades have felled on the mountain-side thousands of feet above him. Everywhere, in our journey, we shall see evidences of their deep religious feelings; for along every road-side stand pious memorials—simple crosses, perhaps, or more elaborate devices—which tell of how some one was killed on the spot, or how another here narrowly escaped some great danger. And the peasant, as he passes by them, reverently bows his head, and breathes an inward prayer. They are people of simple innocent manners, of unaffected cheerfulness and contentment; they are kind and courteous to travellers; they are not churlish like the Northern Germans, nor greedy and cheating like the Swiss.[1]

When we leave Rosenheim, early next morning, the little town is alive with country people, for it is market-day. They are all dressed in picturesque costumes,—the women with rather short petticoats, of various colours, with tight velvet bodices, open in front, and decked with silver ornaments. The men have green steeplehats, in which are stuck cocks' or eagles' feathers; curiously embroidered girdles are round their waists; they wear knee-breeches, which set off well-turned and muscular legs; and jackets, with silver-coins sewn upon them for buttons. Crossing the hills that invest the plains of Rosenheim, we drive over an undulating country,—through the midst of harvest-fields, where groups of sun-browned reapers, busy among the sheaves, greet us as we pass with the cheery salutation—"*Glückliche Reise!*"—"A pleasant journey!" Soon the Chiem-See is reached—the largest of the Bavarian lakes—a fine expanse of water some twelve miles long and nine broad. We skirt its beautiful beach, and enjoy a lovely mountain landscape in the far distance; for the long chain of the snow-capped Tyrolese Alps rears its peaks beyond the opposite shores. We get to the little town of Traunstein at dusk, and here we halt for the night.

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[1] "They are more agreeable than the Swiss; and are distinguished by their love of their country, their devotion to the sovereign, the warmth and purity of their faith, their honesty, and (with very few exceptions), I may say, their great civility and courtesy to strangers."—*Sir Humphrey Davy.*

The Salzkammergut, as its name implies,[1] abounds in salt-springs, which yield a constant and copious supply. Reichenhall may be regarded as the centre of the salt traffic, and the brine is conveyed thence to Traunstein, Rosenheim, and other towns, where fuel is plentiful, to be evaporated in the boiling-houses. In the laying of these brine-pipes, considerable engineering skill has been exercised. You see them clinging like ivy-roots to rugged hill-sides; spanning the roads, from rock to rock, high overhead; and stretching across deep defiles on rude wooden bridges. Immense quantities of pine-wood are floated by the river from the forests to Traunstein, where the logs are collected by weirs, and are afterwards built into stacks. As we leave the town early next morning for Reichenhall, the road, for about a mile, is lined on either side by long rows of these stacks of fuel. Then, for awhile, our course follows the windings of the Traun. What a delightful river! Infinite variety and beauty characterize the scenes through which it flows; but the stream itself,—how can one ever forget the exquisite tint of its emerald-coloured waters,—so pure and clear,—which are but melted snows from the glaciers gliding over a bed of pure white pebbly shingle? The road winds along the mountain sides, up a romantic wooded pass, and then descends into the beautiful Alpine valley in which Reichenhall lies. We are in time to join the hôtel *table d'hote*, where most of the guests are visitors to the saline baths which are established here, and at Achselmannstein, about a mile from the town. Reichenhall is, in fact, the great salt-fountain of Bavaria; for all the brine which is conveyed in pipes to Traunstein and elsewhere for evaporation, oozes out of its rocky caverns. As a matter of course we visit the salt-mine, and, clothed in coarse miners' dresses, we descend the cold briny stairs into a chamber where an immense engine forces the brine up to a great height, so as to enable it to enter the great series of pipes which, artery-like, branch from this place in all directions. We are then conducted along narrow lanes, cut in the solid dripping rocks, and are shown all the different springs which yield the brine. These are eighteen in number, and of various strengths; the chief, the *Edelquelle,* which contains 24 per cent. of salt, is the most abundant saline-spring in the world, yielding, as it does, about 200,000 cwt. of salt every year. On our return from the mines, we make the acquaintance of Dr Ris, the physician to the baths here and at Achselmannstein, who conducts us over the bath-houses, and explains the peculiarities of their action. Patients are sent here not only for the sake of treatment by the brine-baths, by the "whey-cure," and by inhalation of the saline vapour, but also, on account of its peculiarly sheltered situation, for those diseases which require a warm genial atmosphere,—such as phthisis, gout, rheumatism, etc. For such cases, the mild and equable climate of Reichenhall and Achselmannstein is very well suited. Its mean temperature in summer is about 55° Fahr.; and the air is not so relaxing in hot weather as that of Ischl; for cooling breezes can enter the valley, where it lies open at its south-eastern extremity, whereas the town of Ischl is shut in by hills on every side. I defer what I have to say regarding the therapeutic uses and indications of brine baths, saline vapour-baths, and the "whey-cure," until I come to speak presently of Ischl, where the very same system is pursued as here.

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[1] Literally, "Salt-Domain."

On in the evening to Berchtesgaden,—a most picturesque little town in a lovely valley, lying at the foot of the lofty Watzmann mountain. Here we rest for the night. This is the summer retreat of the King of Bavaria. His *Schloss*—a plain-looking country house—is close by the town. Before leaving Berchtesgaden we visit the celebrated Königsee—the wildest of all the Salzkammergut lakes—lying in the hollow of lofty mountains, which rise so abruptly from the water-edge that no pathway for human feet can be found along their precipitous sides. Deep green are its waters; deeper and darker in their hue from reflection of the sombre pine-forests which clothe the hills on every side up to their glacier-crowned summits. Here and there bold rocks rear their rugged but picturesque forms from out the depths of the thick leafage. No sounds of life are heard in this scene of savage grandeur, save the faint tinkle of the cattle-bells, or the scream of some eagle. We are rowed along the lake by two good-looking Tyrolese girls, who break the dead silence by singing us their native Jödeln. As their sweet voices carol the air, and the notes are thrilled out with a peculiar guttural intonation, the strange wild melody seems well to accord with the native majesty of the lonely lake.

But let not the reader think that everything is romantic in these charming regions. The inhabitants of these valleys are fearfully afflicted by cretinism; and the two fair rowers of our boat, despite their sweet voices and pretty faces, are disfigured by enormous goîtres. There is little wonder that cretinism is common here, because we find that all the physical causes which conduce to its development are in existence in the deep solitudes of many of these mountain-valleys. Take, for example, Hallstadt, one of the places where I was most struck by the prevalence of cretinism. This is a village on the shores of the romantic Hallstadt-See. This large lake lies between lofty mountains, which give a wild and gloomy character to the scenery, and prevent all access to the wind except when blowing in certain directions. The village is built on the side of one of these mountains, which descends so abruptly to the lake that the houses seem to cling to the steep hillside, "like swallows' nests against a wall." The situation is therefore damp, and ill-ventilated; it is, moreover, gloomy for want of sufficient light, as the sun never shows his face to the poor inhabitants from the 17th November to the 2d February, and often, at other times, is very niggardly of his beams. Hallstadt is, therefore, a perfect focus of cretinism; and as I climbed up the long flights of stairs which constitute its streets, I was followed by a rabble of idiots, with enormous goîtres, dwarfish bodies, and unmistakeable cretin-physiognomies,—all jabbering clamorously for alms.[1]

A few years ago Professor Virchow[2] published some interesting papers on the subject of cretinism in the Bavarian Highlands; and, as regards the ætiology of this disorder, he believes that there exists, in certain districts, a certain diffusible agency, (arising from the soil), or *specific miasma*, which occasions goître in adults, and which affects the fœtus in utero, and young children still more seriously—producing in them, not only enlargements of the thyroid glands, but also morbid changes in the development of the central nervous apparatus, and its envelopes. This diffusible miasmatic element mixes with the air, and impregnates the water of the region producing it; and thus it is received into the human system by means of respiration, or by absorption through the mucous membranes or the skin. This poison may be communicated by a mother to her child, during its fœtal life, without any manifestation of the disease in herself; so that a cretinous child may be born of parents apparently healthy, in districts where the miasm is prevalent. A curious illustration of this has been observed at Reichenhall by Dr Schierlinger. The Government officials sent thither, to be employed at the great salt-mines of which I have spoken, have been known to beget goitrous and cretinous infants during their residence at Reichenhall, although they had always previously had healthy offspring; and, on their being removed from this place to some other locality where the miasma was not prevalent, the infants born to them were strong and healthy as before. Virchow believes that the amount of cretinism, like that of other epidemic diseases, undergoes periodical fluctuations. In certain districts it begins to decline, and eventually to disappear;

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[1] The word *Fex* has long been used in this district to designate these unhappy beings. Some people think it a corruption of "Vir vexabilis."

[2] Ueber den Cretinismus, u. s. w.; *Ges. Abhand. zur wissensch. Med.* 1855–56.

while in others it makes its appearance, and spreads quickly. Virchow says, in the neighbourhood of the Spessart Forest,[1] where cretinism was very prevalent from 1822 to 1832, the disease seems now to have become extinct, because in 1851 no single instance of its reappearance could be elicited by the most careful inquiries. The cretinism miasma is only communicable to man; for animals in Alpine regions are not found to have goître.[2] Certain races appear to be more affected by it than others; thus, in Styria, cretinism occurs among the Germans in the proportion of 1 in 113, and among the Slavonic population only as 1 in 513.[3] Females also seem more liable to it than males. Köstl tells us that of every 1000 cretins in Styria, 803 are females.[4]

The same evening we go on to Salzburg,—a miserably dull, grass-grown, stupid, monkish town, which is most picturesquely situated in the centre of a level and fertile plateau, surrounded by the Tyrolese and Salzburg Alpine ranges. Its fortress overlooks the town, perched on a rocky hill,—that reminds one somewhat of Edinburgh Castle, though it has not half its grandeur. After a few days' residence here, we pass on to our next stage—Ischl. But we dare not linger longer by the way, nor exhaust the reader's patience further by descriptions of the route.

Ischl lies 1500 feet above the sea, on the banks of the Traun, in a green amphitheatre of lofty and romantic hills, which shelter it on every side. Although it has been known as a watering-place since 1822, it has only come into fashionable repute within the last eight or nine years. It owes this sudden rise in popularity mainly to the patronage of the Emperor of Austria, who has built a château here, and made it his usual summer residence. Pleasant associations have doubtless swayed the Imperial choice as much as the romantic beauties of the district, for it was here, in 1853, that Francis Joseph was betrothed to the Empress. Many of the Austrian nobility have also erected summer villas here, and in the *Kurzeit* or season, Ischl is thronged by notabilities from all the continental courts. The town itself is small, but regularly built; and the pure white houses, with their green outside-blinds, their airy verandahs, and tasteful pleasure-grounds, give it an air of lightness and elegance. In all directions there are charming walks, laid out among the forests on the hillsides, or along the picturesque ravines below; and every here and there are artificial grottoes, cool summer-houses, and pleasant rustic seats to invite the weary wanderer to rest. The principal promenade is by the banks of the Traun, where the path is shaded by lines of lime and acacia trees. Here stands a good bronze statue of Hygeia, with the following inscription on its pedestal:—

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[1] See "Concerning Bavaria," by the author, in *Edinburgh Medical Journal*, January 1859.

[2] Fabré, *Traité du Goître et du Crétinisme.* Paris, 1857.

[3] Köstl, *Der endemische Cretinismus als Gegenstand der öffentliche Fürsorge.* Vienna, 1855.

[4] Ibid.

"Mann nennt als grösstes Glück auf Erden,
Gesund zu sein,—
Ich sage—nein!
Ein gröss'res ist, gesund zu werden."[1]

In a garden close by the baths there is a colossal bust of Dr Wirer von Rettenbach, a Viennese physician, whose energies were devoted to the development of the therapeutic resources of Ischl. A neat little pump-room (*Trinkhalle*) in the main street, is thronged by the visitors every morning from 7 to 8, where they drink pure or medicated whey, and listen to the music of an excellent band. Baths are attached to this colonnade, as also a ball-room and a reading-room. The climate of Ischl is very mild and genial, and the air, which is slightly humid, is impregnated with minute saline particles from the steam of the salt-works. It is therefore well suited for the residence of persons with chronic pulmonary diseases, during the summer months; and many such patients, as autumn advances, go south and winter in Italy. Now for a few remarks on the baths, etc.

Brine-Baths.—These are chiefly valuable to the Germans as a substitute for sea-bathing; yet they are said by the physicians to have a more powerful action than ordinary sea-water. The brine here is not obtained from rocky springs as at Reichenhall, but it is merely an artificial solution of rock-salt, obtained by filling chambers in the adjoining salt-mine with water. When completely saturated, the solution is conveyed in wooden tubes to the baths; and the brine thus prepared contains, in addition to about 27 per cent. of common salt, considerable traces of the chloride, sulphate, carbonate, and bromide of magnesia. The brine-baths are always taken in a dilute form. If used very strong, their tendency is to produce dangerous internal congestions; hence, for delicate persons, and those who are liable to such congestions, they require to be made very weak indeed. The usual strength varies from about three to eight gallons of brine to sufficient water to make a bath; and the temperature is rarely ordered above 90° F. These baths are very beneficial for scrofulous and rachitic children; in cases of defective menstruation, accompanied by eczema, or other skin affections; in ovarian tumours, occurring about the "change of life;" and, especially, in cases of hypertrophy of the uterus, resulting from metritis or from arrested involution after delivery. They are serviceable as part of a general tonic regimen in cases of threatened phthisis; but where this disease has advanced beyond the first stage they are not advisable.

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[1] I append a translation for those who may not understand German:—

They say good health's the highest bliss
Man can attain:—
Health to regain,
Say I, is greater boon than this!

Saline Vapour-Baths.—The vapour arising from the boiling-houses of the salt-works is strongly impregnated with minute particles of salt, and contains also traces of iodine and bromine. It has a pleasant briny smell, that reminds one of the odour felt on coming near the sea-shore. The feelings experienced on breathing it are very agreeable. It soothes the respiratory passages, and enables one to take long and deep inspirations with great ease. Its inhalation has been found to be very beneficial in many diseases of the air-passages, especially in cases of follicular and tubercular disease of the pharyngeal and laryngeal mucous membranes, in chronic laryngitis, chronic bronchitis, etc. Patients with such affections express immediate relief from its inhalation; the difficulty of breathing, and sense of constriction round the chest, are alleviated, and the tickling cough ceases to be troublesome. It is believed that breathing an atmosphere thus impregnated with saline vapour has a great effect in preventing phthisis; for it is a well-established fact that the workmen employed about the boiling-houses are rarely affected by tubercular diseases. At Reichenhall, as at Kreuznach and elsewhere, the patients are made to promenade along the galleries above the boiling-houses, so as to breathe the ascending steam, or, in fine warm weather, when the air is calm, to walk in the immediate vicinity of the works. But at Ischl there are greater facilities for treatment by the saline vapour-baths. For this purpose there are twenty little closets specially fitted up with apparatus for applying the brine-vapour to any part of the body. These *cabinets* have perforated wooden floors, through which the steam from the boiling brine rises up, from a large evaporating pan having an area of 2000 square feet. The vapour is diluted with atmospheric air before its introduction into the closets, and the superfluous steam is carried off by a ventilator in the roof. In each chamber there is an apparatus, consisting of a wooden tube fixed in the floor, with a funnel-shaped mouth-piece made of tin, for the use of those who desire to inhale the vapour for diseases of the respiratory organs. Modified vapour-inhalation can be obtained by walking on a gallery erected above the salt-pans, at certain times of the day, when the rising fumes are undisturbed. The diet is carefully regulated during the course of treatment, and whey, with or without the addition of mineral waters, is taken daily. At Reichenhall, Dr Ris informed me that he finds great benefit from the simultaneous use of an infusion of the green needles of the pine-trees (*Fichtelbaumthee*).

The Whey Cure.—I may say a few words on this system of treatment, which is carried out to a great extent at Ischl. "We give whey," says Beneke, in his well-known work[1] on the subject, "in those cases where we wish to diminish the nitrogenous elements of the blood, without altering the quality and quantity of the various inorganic compounds which are essential to the proper nutrition of the body." In other words, whey is given in cases where we wish to reduce plethoric conditions, and to correct deranged action of the liver and bowels, without perceptibly lowering the vital powers. As used at Ischl, and other Alpine villages where there are institutions for treatment by this remedy, the medicinal whey is not only a bland nutrient agent, but is a gentle yet efficacious laxative and diuretic. It is prepared by the Tyrolese from the milk of their sheep, cows, and goats, which browse on the wild herbage of the mountains. It has an opalescent appearance, a pale yellowish-green colour, and a sweet aromatic taste. It contains all the nutritive elements of the milk, separated from the casein or nitrogenous part. The watery constituents of the whey act on the kidneys, and gently favour the metamorphosis of tissue, while its sugar of milk, if not too quickly absorbed, acts as a mild laxative. Goats' whey is more efficacious than the others as an aperient, on account of its containing a larger proportion of sugar of milk. When a slightly purgative effect is desired, the whey is taken about one or two hours after breakfast, instead of on an empty stomach, when it would be too rapidly absorbed. In all other cases, however, it is drunk, fasting, before breakfast, and a brisk walk is taken between each glassful. The quantity taken varies from one to four small tumblerfuls; and mineral waters of various kinds, *e. g.*, those of Kreuznach, Kissengen, Selters, Vichy, etc., are mixed with it when ordered by the physician. The use of whey is highly recommended in cases of abdominal plethora, in hyperæmia of the liver and spleen, in threatened phthisis, in scrofulous affections generally, in chronic dyspepsia and constipation, and in cases of impaired nervous energy where the circulation is languid and the extremities are constantly cold. I fancy that it gets the credit of many cures which are effected by change of scene, fresh mountain air, plenty of open air exercise, and the cheerful society of a watering-place. But it is a pleasant depurative agent, if it does not possess all the virtues which enthusiastic German physicians ascribe to it; and if the reader goes to Ischl, let him drain off the crystal gobletful, handed him by a buxom Tyrolienne, with faith and thankfulness.

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[1] *Die Rationalität der Molkenkuren*, 1853.

In conclusion, there are few places more attractive than Ischl for pleasant situation and romantic scenery. And those of my hard-worked professional brethren, who can spare time for a "physician's holiday," will never regret spending part of their vacation amid the charming lakes and valleys of the Salzkammergut.

FROM LINZ TO VIENNA BY THE DANUBE.

Here we are at Linz, on the banks of the Danube. We left Ischl, steamed across the picturesque Traunsee to Gmunden, and took the railway there for this little fortified Austrian town. It is early morning, and thick white fogs hang over the river as we go on board the Vienna steamer. But these watery vapours are soon chased away by the warm sun-beams, and the magnificent river becomes visible, as it rolls proudly on through the landscape.

So now we are fairly off for Vienna. We encounter several old *compagnons de voyage* among the passengers, both English and Germans. There are many hearty greetings and mutual congratulations exchanged on our unexpected meeting. Notes of each others' wanderings are compared since last we met among the glaciers of the Watzmann, in the Tyrol, or in the green valleys of Ischl ; and plans for the future are confidentially discussed. I got into conversation with two of my German travelling friends. One of them was a judge from Breslau, who had been spending his statutory holiday among the lakes and mountains of Bavarian Switzerland and the Tyrol. The other was Dr ——, a physician from Munich, who was, like myself, *en route* for the medical school of Vienna during *his* "Herbstreise ;" for, every German doctor makes a point of having a good long vacation every autumn.

Our voyage is dull enough at first ; for we have to steer skilfully out and in among little islands covered with willows, and past dangerous shoals of gravel, which raise their backs, gleaming with hot shingle, above the level of the rushing flood. But these are soon left far behind, and we enter upon a panorama of mountain scenery of marvellous beauty ; the river swells out into a lake-like breadth, and its waters are dark, deep, and fast-flowing. We sail past mountains, whose sides are clothed with pines and beeches, and whose summits are crowned by old feudal castles and venerable cloisters. We have peeps of quiet valleys, traversed by flashing little rivers ; of sleepy villages, with wooden timbered houses ; of farmsteads, with creaking waggons drawn by long-horned oxen ; of antique parish churches on the hill-sides ; of busy towns on the shore, with wharves at the water's edge, where a few barges are moored, to be freighted with timber or ores. Every castle, as in the Rhine district, has its wild legend,—tales of love, jealousy, and revenge, which seem glimpses of the mediæval times when Conrad the Fierce, or Rudolf the strong, reigned in these fastnesses, and carried terror into the hearts of all the country round. We were passing such an old fortress,—and the physician had told us its grim traditions, and thrilled us by the horrors of its Folter-kammer, or torture-chamber,—when we began, involuntarily, to contrast these olden days of armed wrong and helpless rights with the happier jurisprudence of modern times. And so the tide of our conversation drifted insensibly into new channels, and we talked about those ever interesting questions,—How are we to diminish crime ? What are we to do with our criminals ?

Much we said concerning these two grand social problems of the age, and what our several countries had done and were doing to arrive at their satisfactory solution. I cannot pretend to relate our interesting conversation, or to chronicle all the valuable information which I elicited from my friends; but as the general tone of our discourse still remains fresh in my memory, I will attempt to reproduce it, as we sail along, in the form of

CRIME AND DISEASE,—A MEDICO-PSYCHOLOGICAL HOMILY.

> "Si malè rem gerere insani est; contra, benè sani:
> Putidius multò cerebrum est (nihil crede) Perilli
> Dictantis, quod tu nunquam rescribere possis."—*Horace.*

On the causes of, and remedies for Crime, we have had blue-books without end, official reports innumerable, and pamphlets and treatises *ad nauseam.*

Every sect of religionists, every class of reformers, and every party of politicians, has propounded its favourite theory, and prescribed its own remedy for the evil. Teetotallers tell us that drunkenness is the cause of, and total abstinence the only cure for, crime. The more rigid of these abstainers allege, that so long as our public-house doors are open, so long will our gaols be filled. More plausibly it is argued by others, that, to stem the current of iniquity, we must reform and reclaim the outcast young of our large populations; and ragged schools and reformatories are offered us accordingly. Educate the masses, say others, and elevate their tastes;—provide means for their enjoying innocent recreations, and engaging in healthful sports; and thus you will lessen their love of low and debasing enjoyments, and diminish the tendency to crime. Build more churches, endow more parishes, ordain more clergy, say the religious community; and the mild laws of the Christian Faith, and the promises and threatenings of the Gospel, will tame these wild elements into subjection. All these advisers speak from honest convictions, and offer suggestions for no self-seeking ends; and all of them set to work, after their own fashion, to achieve the conquest of error and crime. God forbid that we should depreciate the great philanthropic efforts which good men of every party are making to effect this desirable result. Let them work on, hopefully and prayerfully, and in time their labours may be blessed. But yet, let us not blink plain facts: their efforts have hitherto, in great measure, failed in diminishing the amount of crime. Despite the spread of temperance principles, the erection of ragged schools, the building of churches, the foundation of juvenile reformatories, and the rise in every town of a mechanics' institute, we have still an alarming amount of crime in our land; and the great social problem, to which I have alluded, is as yet unsolved. There is evidently something more to be done. We must look deeper, and search till we find all the germs whence this devil's harvest of tares have sprung. We must trace the stream of moral pollution to its source, and ascertain how far it springs from the inherent depravity of man's nature, and how far from the physical circumstances in which the individual has been placed. For our body and our mind are closely and inseparably interwoven together; they react powerfully on each other; and the state of the former influences more or less the condition of the latter. "Orandum est ut sit mens sana in corpore sano." Nothing is of greater practical importance than a remembrance of these facts, —on which such mighty issues depend. For all the records of history, and all our everyday experience, teach us that, whenever the body becomes impoverished by want, exhausted by fatigue, or altered by disease, the mind suffers with it, and often becomes perverted in its functions. And this is not only true of individuals, but of whole nations; for history tells us, that when predominant ideas seize upon communities, whose physical strength has been weakened by the ravages of war, pestilence, or famine, peculiar trains of morbid thought are apt to arise, and to become universal. Moral disorders, under such circumstances, spread with the rapidity and universality of an epidemic disease. Thus, in the tenth century, panic and prophecy followed the horrors of famine; and the grim fury of the Flagellant devotees was the melancholy sequel of the "Black Death" which had scourged the face of Europe. Want of adequate nourishment is one of the surest causes of impaired mental powers. For we find that deficient and improper alimentation, while it lowers the tone of the bodily health, engenders mental degeneracy, and develops all the darker features of our moral nature.[1] Mental vigour is impaired by neglect of the laws of health. The infant born of dissipated or profligate parents, inherits a feeble frame; while its irregular, and often scanty supplies of food, beget fretfulness and peevish discontent in childhood, which gain strength with increasing years, and lay the foundation for a blighted life,—darkened (it may be) by the shades of vice. Irritability of temper, weariness of life, thoughts of suicide, and yearnings after crime, are too often the results of dyspepsia and improper diet. Dives, "faring sumptuously every day," but having his blood loaded with lithic acid, is fretful and unhappy in the midst of all the enjoyments which wealth can purchase. The poor agricultural labourer, toiling early and late in the fields, and earning barely sufficient for procuring the common necessaries of life, is generally cheerful in the midst of his poverty, because temperance, exercise, and fresh air have made him robust and healthy.

Crime, in the abstract, is generally found associated with those conditions which operate against physical health, and these agencies are very often the causes of its development. Mr Kinglake tells us, in *Eothen*, that the rigorous fasts of the Greek Church produce an ill effect on the character of the people; and that with the increase of sanctity there comes a fiercer desire for the perpetration of dark crime. "The number of murders," says he, "is greater during Lent than at any other time of the year. A man under the influence of a bean dietary (for this is the principal food of the Greeks during their fast) will be in an apt humour for enriching the shrine of his saint, and passing a knife through his next-door neighbour."

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[1] We read in the *British and Foreign Medical Review*, Jan. 1844, that "a comparison was made between the progress of two sets of children in Glasgow, the one from the Wynds, the other from a more healthy town district, and of a better physical condition. Although the former were placed under the best master, his pupils proved unable to keep pace with the better bodily-conditioned children. Physical and mental aberration and degeneration proceed in parallel lines, till man finds himself an adult, the creature of artifice, and the slave of sensuality; or mentally and physically, the degenerate son of poverty."

Total neglect of the grand principles of hygiene will infallibly induce diseased conditions alike of mind and body. Mr Kingsley, in *Two Years Ago*, preaches a telling homily on the sin of those who refuse to recognise, in the ravages of cholera, God's judgment upon dirt. And just as surely as a pestilence like cholera is engendered and spread by filthy habits, so is the moral plague of crime bred and fostered by the wretchedness, squalor, and noisomeness of the dwellings of the lower classes in our large cities. Dr Southwood Smith and others have given us startling pictures of the homes of the city poor in London; and similarly wretched are their dwellings in all our larger towns. When we read of six and eight people, of both sexes, crowded into a chamber of eight feet by ten, and about nine feet high, need we wonder that "the stench was intolerable?" Or need we marvel that such filthiness, want of ventilation, and total abnegation of all the decencies of life, should induce the deepest moral degradation, and sow the seeds of crime? The scanty diet and the foul air induce, with certainty, an impoverished condition of the blood; and this fluid, circulating through the brain, materially deranges the sensorial functions. There is truly little temptation to the man who is well fed and comfortably housed, to steal, or to commit outrages against the laws; but with the poor half-naked wretch, who has no certain mode of gaining his bread, and who lives in such a pestilential den as I have described, the case is far otherwise. Gaunt with starvation, fierce with hunger, and maddened by the scorn and indifference of the cold world around him, he feels horrid thoughts stealing into his mind; he hears voices prompting him to the commission of unholy deeds; and he experiences a dire and irresistible impulse to plunge into crime. May there not be, in the crime committed by such a man, a tinge of insanity? Under such circumstances, may not all mental balance be lost, and the reasoning faculties have become perverted and distorted? An eminent authority in psychology, Dr W. A. F. Browne (late of the Crichton Institution, Dumfries, and now one of the Scotch Commissioners in Lunacy), tells us that inadequate "nourishment may be the cause of every form of alienation. Imperfect assimilation, either from the deficiency of the supply of food, or the morbid state of the organs engaged, is the first stage of melancholia, and of a large proportion of all other forms of mental alienation." Similar testimony is given by Dr Forbes Winslow.[1] Is it not then the duty of all in authority to consider carefully the individual peculiarities of every separate case of crime?

I have tried to prove that crime may often be the bitter penalty of neglect of the physical laws of health, and the result of the mental degeneracy thereby induced. If this be true, it is evident that our social reformers can have little chance of wide-spread or lasting success, unless, along with other humane means, there be something done to remedy the physical causes of moral disease. Our criminal population are degraded by the circumstances in which they are placed. How can virtue, which, under the most favourable auspices, is so difficult to cherish, and so prone to become blighted, be preserved in such an evil atmosphere? Their minds are dragged down to the level of the brutes; every ennobling attribute is withered; every virtuous thought is chilled; every holy aspiration after better things is strangled in its birth. Grovelling in darkness and pollution, the souls of these poor "infanti perduti" become dark, and lose the image of God. However willing they may be to amend their lives, they cannot escape from the dire truths of their daily life—from the filth and the loathsomeness of their homes. In this poisoned atmosphere they cannot breathe freely, and so they readily relapse into a course of sin and shame. Sir Benjamin Brodie has illustrated this very forcibly in his *Psychological Inquiries*.[2]

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[1] "I maintain, and facts—an overwhelming mass of facts—clearly, irresistibly, and conclusively demonstrate my position,—that there is a vast amount of crime committed by persons, who, if not 'legally' or 'medically' insane, occupy a kind of *neutral ground between positive derangement and mental sanity.* I do not broach this idea with the view of supporting the absurd, unphilosophical, and dangerous opinion, that *all* crime is more or less referable to aberration of mind; but I do affirm, that in estimating the AMOUNT OF PUNISHMENT to be awarded, it is the solemn duty of the judge, not only to look at the *act itself*, but to consider the *physical* condition of the culprit—his education—moral advantages—prior social position—his early training—the temptations to which he has been exposed—and above all, WHETHER HE HAS NOT SPRUNG FROM INTEMPERATE, INSANE, IDIOTIC, AND CRIMINAL PARENTS."—*Lettsomian Lectures*, *Psychological Journal*, January 1855.

[2] "In a conversation which I had with a very intelligent person employed by the 'City Missionary Society,' whose location in London was among the inhabitants of St Giles' parish, he said, 'I assure you, that there is scarcely any one of them who might not obtain a comfortable livelihood if he could leave off drinking gin.' But see how one thing hangs upon another, and how one evil leads to another evil. Mr Chadwick has shown that many are driven to drinking gin as affording a temporary relief to the feelings of depression and exhaustion produced by living in a noxious atmosphere; and he gives instances of individuals who had spontaneously abandoned the habit when they were enabled to reside in a less crowded and more healthy locality, where they could breathe pure air instead of loathsome exhalations. The case of such persons is analogous to that of others who become addicted to the use of opium, as the means of relief from bodily pain. *Schools and churches are excellent things, but it is a vast mistake to suppose that they will do all that is required. There can be no feeling of contentment where there is an insufficient supply of wholesome food;* and the 'Temperance Society' can make few converts among those who live in crowded buildings—unventilated, and with imperfect drainage. Our Legislature

Let us think, then, more gently of the failings of our fellow-men. Let us ever ask ourselves, Would *we* have come through the same furnace of temptation unscathed, if we had been placed in like circumstances of education, worldly possessions, and health of body and mind?

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My homily is ended. Ere we ceased talking on this subject, I drew from my pocket a copy of Longfellow's delightful *Hyperion*—a work which had been my companion in the Tyrol—and I read this passage to my friends, who listened, with moistened eyes, to the words of charity it breathes:—"The little I have seen of the world and know of the history of mankind, teaches me to look upon the errors of others in sorrow, not in anger. When I take the history of one poor heart that has sinned and suffered, and represent to myself the struggles and temptations it has passed—the brief pulsations of joy—the feverish inquietude of hope and fear—the tears of regret—the feebleness of purpose—the pressure of want—the desertion of friends—the scorn of the world, that has little charity—the desolation of the soul's sanctuary, and threatening voices from within—health gone—happiness gone—even hope, that stays longest with us, gone—I have little heart for aught else than thankfulness that it is not so with me, and would fain leave the erring soul of my fellow-man with Him from whose hands it came."

The vessel rocks and pitches as if we had suddenly got into a rough sea. We are sailing over the famous *Strudel*, or whirlpool, of the Danube. These rapids used to be very dangerous to the fisherman in his light skiff; and it was formerly the custom for a boat, bearing an image of the Virgin for its figure-head, to put off from the shore, a little farther down the river, to ask a thank-offering from all who had escaped the dangers of the whirlpool. But the romance of the scene has been spoiled by the Austrian engineers, who have blasted the rocks which form the rugged bed of the river, and thus have diminished the dangers of the whirlpool. This was formerly an eligible situation for knightly robbers, who fattened on the plunder of merchant vessels; and strange tales are told of how they lured on the mariners, by false beacons, to places where they were certain to be wrecked, and thus fall an easy prey to these knaves. Rudolf of Hapsburg, as Carlyle tells us in his "Frederick the Great," executed summary justice on many of these offenders. Somehow or other, talking of these events, made our conversation turn upon capital punishments; and my friends sought for information about their nature and frequency in England. I told them all I knew, and of the more humane spirit of our criminal code within

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has accomplished much, and as much as it can reasonably be expected to accomplish, towards the attainment of the first of these objects; and measures are now in progress which justify the expectation, that eventually much good may be done in the other direction also."

the last thirty years. They discussed the whole question very frankly and sensibly,—avoiding altogether the trite controversy of their propriety or non-propriety, for we all seemed convinced of their necessity in cases of murder. We regarded ignominious deprivation of life as the most dreadful of earthly punishments; and felt that the saying of Sallust,[1] that some men dreaded death less than captivity, was not in accordance with human nature. But we talked of the various modes of inflicting the extreme sentence of the law, and discussed them severally from a medical point of view. The physician said he agreed with a recent writer, Dr Clemens of Frankfort-am-Maine,[2] that death should be inflicted in the quickest and least painful way; that no exhibition of the condemned convict should be allowed, to gratify morbid curiosity; and that only his near relatives and his spiritual adviser should be allowed to see him. This was very sensible and humane; for whatever may have been the delinquent's guilt, we only require his life as a forfeit; his mental and corporeal sufferings, therefore, should both be abbreviated to the utmost, and all the aggravations of capital punishment, devised and practised by the old criminal law, should be discarded as superfluous and inhuman. "La peine de mort consistera dans la simple privation de la vie, sans qu'il puisse jamais être exercé aucune torture envers les condamnès." That prurient curiosity, so prevalent amongst us, which dwells with delight on every circumstance of a murder, which gazes on the murderer's face with an interest proportioned to the enormity of his crime, and which treasures up with care every relic of the bloody deed, should be discouraged to the utmost by all right-thinking men. What a temptation to bloodshed does this popular interest in the fate of murderers present to the reckless and the ignorant! The hardened villain shrinks not from the highest crime, when he reflects that after all, if the worst come to the worst, he has only to be tried before a crowded and fashionable court, to be stared at by ladies of rank and education through jewelled *lorgnettes*, to be visited in prison by all sorts of philanthropists, and, finally, to make his exit from the world before the admiring eyes of thousands and thousands of his fellow-creatures, making a disgusting carnival of the day of his doom. Let us divest crime of any fancied romance attached to it; let us view its committers in all their brutality and repulsiveness; and thus let us cease to be, as a nation, admirers of "murder as one of the fine arts."

The Breslau judge thought the interval between the sentence and the execution should be brief, as is ordained by the Prussian laws. Granted; but let there be time for repentence, as we ourselves look for mercy hereafter. We differed as to the question of public or private executions. The system of private executions is now adopted in Prussia (according to the statute of 1st July 1851), where the execution takes place in a closed room, in presence of a clergyman, five officials, and twelve respectable members of the parish. At the conclusion a bell sounds, to announce to the world that all is over. A similar mode is adopted in Oldenburg and in Würtemberg. There cannot be a doubt that public executions have a most injurious effect upon public morality; and that such disgusting spectacles are calculated rather to blunt the feelings and brutalize the heart, than to deter from crime or reform from vice. But the ends of justice are probably better served by a public than by a private execution. In the latter case doubts are liable to arise, however respectable the witnesses may be, as to whether or not the sentence has really been carried into effect; and, where the condemned is a man of wealth or rank, grave surmises may be afloat as to his having died by the hands of the executioner. But by an execution taking place openly, these doubts cannot well arise, although this certainty of public avengement is purchased at the sacrifice of the injured morality of the masses.

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[1] Multi sunt, qui mortem ut requiem malorum contemnunt, et graviter expavescunt ad captivitatem.

[2] Henke's *Zeitschrift für Staatsarzneikunde*, 1854.

What mode of death is preferable for the ends of justice? I maintained that hanging was ignominious, and probably not painful; and quoted the authority of Soemmering, the physiologist, who asserted that it was the mildest kind of violent death.[1] Death should be inflicted quickly, and with as little suffering as possible, for humanity revolts against all the olden aggravations of the last sentence of the law. ("La peine de mort consistera dans la simple privation de la vie, sans qu'el puisse jamais être exercé aucune torture envers les condamnés."[2]) "The Guillotine,"[3] said my friends,

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[1] Hanging, however, seems to be by no means a painful death. Foderè, the French Medical Jurist, relates several curious cases of persons who had survived hanging, and had given an account of their feelings during strangulation. "Wepfer saw both a man and a woman who had survived hanging: the latter recollected nothing; and the former stated that, on the application of the cord, he *felt no pain, but sunk, as it were, into a profound sleep.* Morgagni, also, mentions that an individual who had recovered, under similar circumstances, informed him that the first sensation was flashes of light before his eyes, and that he then sunk into the same sleep."—*Beck's Medical Jurisprudence*, p. 554.

[2] Edict of French National Assembly, 3d June 1791.

[3] The "GUILLOTINE" was invented by and called after Joseph Ignace Guillotin, who belonged to the medical profession—being a physician in France, and a member of the National Assembly. Strictly speaking, he did not *invent* the instrument, but merely *revived* its use. A similar, but ruder, instrument existed, long before his time, in Scotland (the "Maiden"), in England, in Italy, and in Germany (the old "Fallbeil"). The Italian "Manaja" and the "Doloire of Toulouse" are merely modifications of this instrument. The old Scottish "Maiden" (which is now in the Museum of the Antiquarian Society in Edinburgh) is said by Pennecuik to have been constructed after a model brought from abroad by the Regent Morton, to behead the Laird of Pennicuik.—(See his *Description of Tweeddale.*) As is well known, Morton was put to death by his favourite instrument. It is generally supposed that Guillotin also perished by his invention; but this is erroneous, for he died a natural death, in 1814, at the ripe age of 76. In reviving the instrument named after him, Guillotin endeavoured to devise a means whereby life might be taken away painlessly.

"answers all these purposes *au merveille*, and, if we are to believe its inventor, the victim merely feels a slight cold sensation on the neck, and all is over. There is a certainty, too, in its mechanical operation, which is wanting in our executions by the sword in Germany, for the hand of the *Henker* may tremble, and thus the aim may be missed. Was it not so with your poor Scotch Queen, Maria Stuart, when she was beheaded in Fotheringay Castle?" . . . .

Here our conversation is interrupted by the appearance of a remarkable spectacle. We are passing the village of Marbach, and, on the summit of the steep hill above it, there is a little chapel. This, the famed church of Maria Taferl, is the most celebrated pilgrimage-shrine in Austria, and more than 100,000 of the people come annually to the wonder-working image of the Virgin which is deposited therein, firmly believing in the efficacy of the benefits and cures dispensed. Such a *Wallfahrt*, or pilgrimage, is going through the village as we pass. The procession is composed of many hundreds of peasants of all ages and of both sexes, walking slowly, two and two. First go the old grey-headed men, with the bearded fathers of families and the boys, and after them come the women and the children. Every fourth or fifth pilgrim carries a *Christus*, a cross-banner, or a flag, on which the effigy of the Virgin, or of some holy saint or martyr, is painted in the gayest colours. There are also plenty of huge wooden crosses, sometimes carried by little fellows who stagger under their weight, as we have seen slim ensigns do when bearing the regimental colours on a gusty day. The procession marches to the cadence of a slow solemn chaunt, which these Austrian peasantry, who are admirable musicians and choristers, sing with great effectiveness. There is something very impressive and affecting in the strain, as the deep basses of the men mingle with the clear trebles of the women and children; and one and all go counting their beads, and calling on the Virgin or saint for help in their time of need. Some of these pilgrims have come hundreds of miles—over mountains, through forests, and across lakes—to visit the shrine. The lame, the decrepit, and the diseased among them hobble onwards with a sort of supernatural energy, and those who could hardly stir at home contrive to crawl along with the rest. At night the pilgrims bivouac in green fields or in forest glades. Most of those who join the *Wallfahrten* do so from true religious principles, and a firm belief in the benefits to be earned; but others, I was told, mix with the crowd from the less justifiable motives of custom and love of variety. The promiscuous intermingling of both sexes in these processions has occasionally been found injurious to public morals; and scenes of excess have been known to occur which degraded the pilgrimage into a disgraceful carnival or "holy fair." This has taken place, for example, at the pilgrimages to the Styrian Loretto, the Church of Maria Zell, so that the authorities have had to interfere. But, as I have said, the majority of the pilgrims flock to holy chapels to pray for the re-mission of special sins which burden the conscience, to obtain certain indulgences, to intercede for the cure of some disease in themselves or their relatives, or to return thanks for past mercies and answered prayers. At all these shrines, and at the altars of most of the country churches in this part of Germany, one sees images which have been offered to the Virgin by those pilgrims. If there be disease of the eyes or of the limbs, a rude waxen effigy of the affected part is hung up before the altar by the suppliant;[1] and I have seen (as at Saint Wolfgang's Chapel, in the Salzkammergut) long locks of hair, from women and children, suspended as offerings to the saint. Votive tablets are also affixed to the chancel rails in token of gratitude, often bearing the words, "Maria hat geholfen"—"Mary has assisted me."

Our friend, the physician, said he had known cases of sick persons who had derived benefit from visiting these shrines; and, being a Catholic, seemed to believe, to a certain extent, in such cures having been effected by miraculous influences. I can quite believe that some diseases are removed by visits to these pilgrimage chapels, just as we know that cures have been wrought in olden times by the royal touch, by "seventh sons," and by the manipulations of "strokers;" and, in our own days, by the quackeries of mesmerists, homœopaths, and "rubbers." In numerous cases nature itself is competent to a cure; and the excitement attending the Wallfahrt, the fervour of the pilgrims, and the "pomp and circumstance" of the whole ceremonial, are well calculated to quicken the circulation, to give a fillip to the jaded energies of life, and to raise the tone of the whole system. The imagination is excited, and implicit faith is reposed in the efficacy of the saint's blessings; so the *vis medicatrix* is set to work, to perform the cure, under the most favourable circumstances. We all know how important to the success of a prescription is the patient's faith in the skill of the physician, and in the virtues of the remedy. So long as he kept his secret, Dr Haygarth of Bath performed all the cures of Mesmer and Parker, with two pieces of wood made to resemble their metallic tractors; but as soon as he published his volume, revealing his system, he wrought no more cures. Honest Jean Paul Richter has well said: "The life of the body is as dependent on the spirit, as that is subject to corporeal influences;" and our own Shakspere—who was a true philosopher and an accurate observer of medical phenomena—thus expresses the gist of the whole matter:—

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[1] Heinrich Heine mentions this custom in his famed ballad of "The Pilgrimage to Kevlaar," which is full of quiet beauty, and simple, touching pathos. I venture, though somewhat out of place, to offer the reader a translation of it, as illustrative of these *Wallfahrten*:—

THE PILGRIMAGE TO KEVLAAR (*Die Wallfahrt nach Kevlaar*).

I.

The mother stood at the lattice; her son on a sick-bed lay,—
"To see the procession, William, say, wilt not arise to-day?"

"I am so ill, dear mother, I could neither hear nor see;
For I think of my poor dead Maggie, and sad is my heart in me!"

"Arise! and we will to Kevlaar,—take thy book and rosary,—
And the Mother of God will wholly heal thy heart for thee."

With waving of holy banners, and chaunts of solemn tone,
The procession moveth onward through the Rhenish town, Cologne.

The mother follows the pilgrims, and her son now leadeth she;
And both of them join the chorus, "Hail, Mary, praise to thee!"

II.

The Mother of God at Kevlaar is robed in Her best array;
The sick folks in crowds are thronging,—She hath much to do to-day.

And with them the sick are bringing to Her, as off'rings meet,
Limbs that of wax are moulded, and waxen hands and feet.

For whoso a wax hand offers, on his hand is healed the wound;
And whoso a wax foot offers, his foot becometh sound.

Full many who went on crutches, now nimbly can dance and bound;
Full many are playing the viol who had not a finger sound.

The mother then took a wax-light, and fashioned therefrom a heart,—
"Bear that to the Virgin Mother, and so will She heal thy smart."

The son took the wax heart sighing, and to Mary he went with sighs;
These words from his heart up-gushing, while tears streamed from his eyes:—

"Our remedies often in ourselves do lie,
Which we ascribe to heaven."

Onward we sail,—past Mölk, with its magnificent Benedictine

"O Mary! thou 'highly favoured!' thou pure and holy maid!
'Fore thee, O Queen of Heaven, be all my sorrows laid!

I dwelt along with my mother in Cologne upon the Rhine,
The town which has hundreds of churches and chapels too of thine;

And Maggie lived close beside us, but, alas, now dead is she!
I bring thee a wax heart, Mary; heal my wounded heart for me!

Heal thou my heart sore stricken, and early and late I vow
To sing and to pray devoutly,—Hail, Mary! praised be thou!"

III.

Within their little chamber the son and his mother slept,
When there came the Holy Mother, and softly in She stept.

She bent herself o'er the sick one, as sleeping there he lay;
Laid Her hand on his heart quite gently, then smiled, and vanished away.

The mother all this in her dreaming, and more, too, beheld afraid;
And she woke up from her slumbers, so loudly the watch dogs bayed.

And there lay stretched before her her son, and he was dead!
All flushed were his pallid features with the dawning morning red!

The mother her hands then folded,—she felt she scarce knew how,—
And softly she sung devoutly,—"Hail, Mary! praised be thou!"

Monastery, situated on a lofty hill-top, overlooking the town; past the Castle of Dürrenstein, an old ruin perched on the sharp granite peaks of a steep, pine-clad mountain, which was once the prison of our King Richard of the Lion-Heart. Then we leave the hilly district, and sail through a flat country, until we reach the little village of Nüssdorf, about two miles from Vienna. Here we leave the steamer, and drive in a cabriolet to the Austrian capital, whose medical institutions will next engage our attention.

I cannot tell under what circumstances, or in what place, the reader may chance to peruse this article. Should he read it in his consulting-room, or in his brougham, when he is busy at work, he may likely blame me for having allowed my narrative to become so sketchy and light. But if, as I hope, when these pages see the light, he may read them when he is lying, stretched all his length, beneath the cool shade of green leaves, during an interval of quiet country relaxation from professional labour; or perchance, when he is seated on rocks by the shore, renewing his health by breathing the life-giving sea-breezes: then I trust to find him in a mild humour, ready to bear with my discursive paper, and to pronounce a less austere verdict on its demerits.

BOSTON, LINCOLNSHIRE, *July* 1860.

ARTICLE III.—*Statistics of Prisoners: their Death-rate and their Diseases.* By J. B. THOMSON, L.R.C.S. Edin., Resident Surgeon, General Prison for Scotland at Perth.

No. I.

CLASSES of men, like climates, differ in pathological characters. It appears to me, that if the present plan of prison discipline continues, the study of the diseases incident to the *separate system* and the *long sentences* of convicts must assume the character of a *specialty* in medical science, little less in importance than the study of the diseases of lunatics, or of the army and navy.

In the large convict prisons of England, and in the General Prison for Scotland, we meet with a class differing widely from our civil population. Their hereditary depravity of constitution, physical and mental; their history and degraded habits; their early privations and excesses; their social position,—all distinguish the criminal from the civilian, and must materially modify their treatment—prophylactic or pharmaceutical, medical or moral.

Besides bearing upon medical practice, the statistics of the death-rate and diseases of prisoners involve great and grave social questions, of paramount interest to the legislator, the political economist, and all constituted authorities.

Referring to the system of *separation*, which is now the chief punitive element in our prison discipline, and keeping in view the substitution of long sentences of imprisonment for transportation, perhaps the greatest problem now being solved in our convict prisons is—*How far the separate system and long sentences to imprisonment can be carried out with safety to the bodily and mental health of prisoners?*

Holding these views of the importance of the subject, and having within my reach data of considerable value, aided by good opportunities of studying the diseases of prisoners, I am enabled to contribute the following statistics applicable to the prisoners in the General Prison for Scotland at Perth. The figures are collated and tabulated from the returns made by the governor and surgeon, and embodied in the annual reports of the General Board of Prisons for Scotland, so that their accuracy may be depended upon.

In limine, it is proper to premise to what classes of prisoners these statistics are applicable, so as to estimate the extent to which, from their previous career of crime, their constitutions may have been deteriorated. It is quite clear that a long course of vice and repeated imprisonments must inevitably render the body and mind prone to fatal diseases.

The classes of prisoners comprehended under the following inquiries are :—

1*st*. Male prisoners, sentenced to periods of not less than nine months, and extending to two years.

2*d*. Female prisoners, sentenced to periods of imprisonment of not less than one year, extending to two years.

3*d*. Female convicts, sentenced to transportation or to penal servitude, whose sentences are from three years and upwards to life.

4*th*. Criminal lunatics, whose insanity has either been ascertained in a court of law, or has been certified in terms of the statute.

As to discipline :—Nos. 1 and 2, whose sentences do not exceed 24 months, are under strict separation. This is the established order of discipline, except when relaxed on medical grounds. The only exception to this applies to juveniles, or prisoners under 14, and in special cases under 16 years of age, whose imbecile state calls for association, according to the judgment of the governor and surgeon. These male juveniles, since 1847, have been associated in a small prison, or juvenile department, on account of their tender years. Under the separate system they were found to suffer stiffness of limbs, and physical and mental debility. Now they are drilled to active exercises and military evolutions in an open airing ground. They are trained together, under a proper superintendent, to different trades; and, in a school-room and at chapel, have the benefit of a good secular and Christian education.

The female convicts—Class No. 3—have, since 1855, had the advantages of great modifications in the separate system. After being one year in strict separation, they are allowed association for a few hours daily,—association being gradually extended according to their length of confinement and their individual good conduct respectively.

The liberal dietaries; the rules for airing and exercise; the cleanliness of body-clothes and bed-clothes; the arrangement of the cells, which generally contain from 700 to 900 cubic feet; the temperature, ventilation, and other sanitary measures,—are all carefully attended to, and may fall to be noticed more appositely afterwards under the head of "General Health and Sickness."

TABLE I.

Showing the Prison Population, the Daily Average Population, and Number and Per-centage of Deaths during the Decennial Period 1850-1859.

Years.	Total Prison Population.	Daily Average Population.	Annual Deaths.	Per-centage on Daily Average Population per Annum.	Deaths per 1000.
1850	810	403	3		
1851	757	417	4		
1852	796	434	8		
1853	876	459	4		
1854	1045	580	9		
1855	1134	498	10		
1856	998	583	11		
1857	961	593	12		
1858	982	561	10		
1859	1085	632	12		
	9444	5160	83	1·60	16·08

Out of a total prison population numbering 9444, and with a daily average population of 5160, we have, during ten years, 83 deaths—1·60 per cent. per annum, or 16 deaths per 1000.

But we must also take into consideration the numbers who in these years were liberated on medical grounds.

TABLE II.

	1850	1851	1852	1853	1854	1855	1856	1857	1858	1859	Total.
Liberated on Medical Grounds,	4	3	7	4	3	0	0	1	4	1	27

TABLE III.

Showing the Number of Deaths and the Causes of Death during the Years 1842 *to* 1859 *inclusive.*

Fatal Diseases, or Causes of Death.	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.	1850.	1851.	1852.	1853.	1854.	1855.	1856.	1857.	1858.	1859.	Totals.
Zymotic Class.																			
Diarrhœa	...	...	...	...	...	...	1	...	...	...	...	...	3	...	...	...	...	...	4
Cholera	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Influenza	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1
Scurvy	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
Fever	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Tubercular Class.																			
Scrofula	...	...	...	1	2	...	...	...	...	...	...	...	...	...	...	...	1	...	4
Phthisis	4	2	2	...	4	1	2	1	...	...	1	...	3	5	4	1	4	4	38
Marasmus	1	...	...	...	1	...	...	1	...	...	...	2	...	...	...	...	...	...	5
Of Nervous System.																			
Paralysis	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	2
Epilepsy	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Apoplexy	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1
Brain Disease	...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...	...	...	4
Decay from Insanity	...	...	...	...	...	...	...	...	2	1	...	...	...	...	...	3	...	...	6
Delirium Tremens	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Of Organs of Circulation.																			
Heart	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	1	1	4
Pericarditis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
Aneurism	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
Of Respiration.																			
Bronchitis	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	1	3
Pneumonia	...	1	...	...	...	...	...	...	...	1	2	...	...	...	...	...	1	...	5
Asthma	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	2
Hæmoptysis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1
Hydrothorax	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	2
Of Digestion.																			
Epistaxis	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
Enteritis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
Peritonitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
Hæmatemesis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1
Constipation	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1
Of Organs of Locomotion.																			
Rheumatism	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Of Urinary and Generative Organs.																			
Cancer Uteri	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	2
Bright's Disease	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
Suicides	...	...	...	...	...	...	...	...	...	1	1	...	...	...	1	...	...	...	3
Unknown	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
Worn Out	...	1	...	...	...	...	...	...	1	...	1	...	...	3	...	4	...	2	12
Of Old Age	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
	5	6	3	3	7	1	5	2	3	4	8	4	9	10	11	12	10	12	115

An analysis of the octo-decennial record of 115 deaths, and the causes of death, as set forth in Table III., gives—

The deaths of male prisoners,	77
,, female do.,	38

The diseases of which they died were—

Contracted *before* admission,	72
,, *after* admission,	43

The ages of death were—

	Males.	Females.	Total.
10 and under 15,	7	0	7
15 ,, 20,	25	4	29
20 ,, 30,	21	15	36
30 ,, 40,	11	10	21
40 ,, 50,	6	4	10
50 ,, 60,	5	3	8
60 ,, 70,	1	1	2
70 ,, 80,	1	1	2
	77	38	115

These diseases were fatal on the following months:—

	Deaths.
January,	15
February,	11
March,	11
April,	7
May,	7
June,	7
July,	11
August,	6
September,	15
October,	9
November,	10
December,	6
	115

I propose to give a brief comment on the foregoing tables—1*st*, as to the *death-rate;* and, 2*dly*, as to the *causes of death.*

The death-rate of prisoners in Scotland has been averaged by Mr Frederick Hill, in his work on "Crime," at about 2 per cent. per annum, including a fair proportion of cases of prisoners liberated on the ground of longer confinement being dangerous to life. The death-rate in the General Prison is considerably less.

If we add to the number of deaths in the General Prison for the ten years, 1850–59, which were 83, one-third of the liberations, which were 27, we have 92 deaths, which is only 1·78 per cent. But if we are to add so many for these liberations, we ought also to remember that a proportion may be as fairly deducted for those who are admitted to this prison "worn out" in constitution, and sinking under phthisis, or a general decay of all the vital powers.

In the decennial record, Table I., it will at once be observed that the number of deaths is very different during the first quadrennial and the concluding sexennial period. The increased mortality of the latter period is accounted for chiefly by the additional number of prisoners, a large proportion of whom were female convicts; and amongst this class the deaths of late have been above the average. Male convict prisoners were here in 1854; and, since 1855, this prison has received female convicts, and at present holds in custody all this class of prisoners in Scotland. There can be little doubt but that the mortality of convicts will be considerably greater than that of prisoners under short sentences; but our experience of this in Scotland is as yet scarcely sufficient to furnish satisfactory statistics of the comparative death-rates of imprisonment and convict prisoners respectively.

Sir Joshua Jebb furnishes us with the following statement as to the ratio of mortality in the convict prisons of England :—In 1853 and 1855 there were 18·5 per 1000 deaths, and 3·5 per 1000 pardons on medical grounds. In 1856 and 1857 there were 11·8 per 1000, and the medical pardons were 2·4, showing an aggregate of 14·2 during the last two years, and 22 during the previous two years. The year 1854 is omitted, because in that year cholera caused more deaths than the usual proportion.

A fair means of comparison with other classes is afforded by the statistics lately laid before the House of Commons in regard to the sanitary condition of the army and navy, as also the vital statistics furnished by the Registrar-General at army ages.

Rates of Mortality per 1000 *per Annum Effective Men of all Ages of the Army at Home :—*

Total of the army,	17·5
Foot Guards,	20·3
Infantry of the Line,	18·7
Total force of the navy,	15·5
Manchester, according to Dr Farr,	12·4
Male population of England and Wales,	9·2
General Prison at Perth, 1850–59,	16·0

Comparing the death-rate of soldiers and prisoners, we must observe that soldiers are picked men on admission, and as soon as invalided are dismissed from the ranks. On the other hand, prisoners have the benefits of enforced temperance, regulated dietary, and the most careful hygienic treatment; but here, on admission, all are more or less broken down by vicious habits and long and frequent imprisonment. *Nearly two-thirds of the fatal diseases were contracted before* admission to prison.

2*dly*. As to *the causes of death*, according to Table III., the classes of fatal diseases are as follow :—

Of the Zymotic class,	8
,, Tubercular,	47
,, Nervous system,	15
,, Organs of circulation,	6
,, ,, respiration,	13
,, ,, digestion,	5

Of the Organs of locomotion,	1
,, Urinary and generative organs,	3
Suicides,	3
Unknown,	1
Worn out,	12
Old age,	1

Diseases of the tubercular class stand greatly highest in numerical importance; next to these follow those of the nervous system; then of respiration; then a class called "worn out," for want of a better term—patients who exhibit no particular disease, but sink under a gradual decay of all the functions, bodily and mental.

The *zymotic class* are a very small proportion of the deaths, probably smaller than what is to be found in any other large body of men in ordinary life. Of the eight deaths called zymotic, several ought to be under a different head, but appear in this class in order to correspond with the classification of the Registrar. Of the cases called diarrhœa, for example, none of them can be called epidemic, such as:—

W. S., probably died of a broken-down constitution. Diarrhœa was not epidemic at the time.

W. J., insane; refused medicine and food and cordials; was broken down. Diarrhœa was not epidemic at the time.

W. M., chronic diarrhœa, not epidemic; constitution worn out.

H. W., chronic diarrhœa, from a worn-out constitution.

Indeed, the diarrhœa met with among prisoners is very often the forerunner of a breaking down of the system, terminating in phthisis or gradual decay.

The case of British cholera, also, was A. S., a very dissipated woman, who had led a very irregular life.

The case of scurvy is the only fatal case of this disease that has occurred here since the prison was opened, although in the year 1846 it was epidemic. The account of this case is quite characteristic of those patients who were attacked by this disease:—"Oct. 1853.—J. H., on admission, much broken down; had led a dissipated life; was 16 years in India," etc.

With the exception of the cases of influenza and fever, we can scarcely say that any other deaths have taken place in these 18 years from infectious and epidemic fevers.

This exemption from zymotics must be in some measure due to the facilities for isolating individuals attacked, but also to the careful hygienic treatment and the healthy *locale* of the General Prison.

The *tubercular class* take the most prominent place in Table III. Phthisis and scrofula have been held up as the opprobria of prisons, and as more frequent and fatal to prisoners than others. Our tables do not support this view. Scrofula may be taken along with marasmus; and (calling both scrofula), after all, we have only 9 deaths during 18 years. Only 3 of these have died during the last 10 years; and this I take to be a testimony in favour of the improved system of dietary which for some years has been adopted. It is quite clear that prisoners cannot be kept up without a liberal dietary; and the low diet and the bread and water punishment, once so common, are now rare, because experience has testified that they cannot be borne by the deteriorated constitutions of criminals.

Phthisis stands numerically at the head of the list of diseases. In 18 years the amount of deaths has been 38, or about 33 per cent. of the total mortality.

The report of the Commissioners, above referred to, as to the sanitary state of the army, informs us that, *of the entire deaths* from all causes in the army, diseases of the lungs constituted the following proportions, viz.:—

In the cavalry, . . .	53·9 per cent.
,, infantry, . . .	57·3 ,,
,, Guards, . . .	67·7 ,,
Of prisoners in the General Prison, adding to the cases of phthisis (38) all the other deaths from pulmonary diseases (13); total, 51, .	44·4 ,,

The above quoted Report of the Army Commission also gives the deaths per 1000 from pulmonary diseases:—

Cavalry, ...	7·3
Infantry of the Line, ...	10·2
Guards, ...	13·8
In civil life, according to the Registrar-General, the deaths at army ages from pulmonary diseases are, . .	6·3
For the last ten years in the General Prison the deaths were, per 1000, from pulmonary diseases, . . .	6·6

The public and the profession will be startled by the statement, that the chest diseases of criminals in prison and those in common life are in fatality the same to a fraction. This, I confess, I scarcely expected to find so strongly established by figures as it is here. But the late Dr Malcom and myself have often been surprised at the arrestment and apparent cure of phthisis in the General Prison; and agreed that the absence of the exciting causes, and the carefully regulated diet, temperature, and exercise to which prisoners were subjected, gave great advantages compared with those in common life. These advantages explain the remarkably low rate of mortality from diseases of the respiratory organs in this prison.

Deaths from *diseases of the nervous system* are next to the diseases of the respiratory organs in number and importance among prisoners. The natural alliance betwixt crime and insanity, with other nervous disorders, is generally admitted by those who have large opportunities of observation; and the tendency of prisoners, originally not strong-minded, to give way under the separate system must be also admitted. In addition to these considerations, it is to be kept in mind that a number of the deaths in this record were criminal lunatics, all of whom, with one or two exceptions, are sent to the asylum attached to the General Prison. Four died from brain disease, and six from the gradual decay incident to insanity. In the insane criminals we have an element unfavourable to our mortality bills, because insanity in such is no doubt often related to organic disease. More special notice of this class will afterwards be taken.

Diseases of the organs of circulation, digestion, and locomotion show nothing requiring particular notice here.

The cases called "worn-out" form a large proportion of the deaths. This class is well known in asylums as well as prisons. The patient sinks under a general and gradual decay of all the vital powers, with no special disease. In prisoners, however, this is generally the result of dissipation and long and frequent imprisonments. I am therefore inclined to think that such cases ought to be deducted from our death-rate; and, if so, the mortuary reports would be little, if any, above the reports of the Registrar-General from every-day life. As an example of the sort of cases which are brought here, I give a few notes:—

H. B.—Came into prison *worn out* with gross irregularity of life.

J. B.—Led a vagabond, dissipated life; often without proper food, clothes, or lodging; a *worn-out* man.

J. M.—This boy was worn out by neglect and starvation; scarcely had a regular meal except in prisons; when at large, slept in pigsties and on stairs.

J., or J. C.—His mother kept an indecent house; brought up in vice and privation.

Such is a brief excerpt from the long, sad catalogue of cases in which the fatal diseases had their *point de départ* in constitutions exhausted by the vices and privations common to the criminal population.

There were three *suicides*—one by the prisoner throwing himself over the rails of the gallery, the other two by hanging.

The *probable causes of the fatal diseases* of our prisoners have been recorded by the surgeon in his returns. These causes, of course, are often complex, and especially in the tubercular class, arising not only from hereditary evils, but complicated with poor diet, vicious habits, and very often with syphilis in its secondary and tertiary stages. The estimate, therefore, of the probable causes of prisoners' diseases is to be held only as an approximation to the truth:—

Hereditary and constitutional,	38
Worn out by insanity,	10
,, by dissipation and long and frequent imprisonments,	34
,, by neglect and starvation,	4
Atmospheric changes,	3
Epidemics,	2
Checked perspiration,	1
Masturbation,	1
Injuries by accident,	1
Old age,	1
Unknown,	20

The *post-mortem* inspections of prisoners are remarkable for the amount of organic disease manifested, especially in the bodies of the convict women. The late surgeon and myself have often compared our experiences upon this topic, and were satisfied that no such masses of disorganization presented themselves in our dissections out of prison.

From the foregoing facts and figures we are led to conclude:—

1*st.* That the ratio of mortality in the General Prison for Scotland is 1·60 per cent. per annum, or about 16 per 1000 prisoners.

2*d.* That, if we add to the deaths one-third of the number liberated on medical grounds, we have a death-rate of 1·78 per cent. per annum.

3*d.* That phthisis is the disease most fatal to our prisoners, but little more so than to civilians.

4*th.* That nervous diseases (after phthisis and diseases of the respiratory organs) are next in numerical importance.

5*th.* That a singular immunity from the zymotic class belongs to the prisoners in the General Prison.

6*th.* That a large proportion of the deaths are of prisoners "worn out" by hereditary maladies, dissipation, and long and frequent imprisonments.

7*th.* That, upon the whole, the death-rate and the fatal diseases compare favourably in amount among prisoners with the vital statistics of the army and navy.

8*th.* That, in fine, the diseases and causes of death are not attributable to want of hygienic rules and regimen, nor to the diet and discipline of prison life.

9*th.* That the hereditary transmission of bad constitutions from depraved and degraded parents, early privations and excesses, systems worn out by irregular lives and long and frequent imprisonments, are the prevailing causes of fatal diseases; and but for these causes, peculiar to the criminal classes, the death-rate of the prison would approximate very near to that of the civil population.

In my next paper I propose to give statistics of the general health and sickness of prisoners.

ARTICLE IV.—*Description of a Case of Double Uterus.* By JOHN STRUTHERS, M.D., F.R.C.S., Lecturer on Anatomy, Surgeons' Hall, Edinburgh. With Woodcuts.

INSTANCES in which the human uterus is more or less double are not so common but that the description of a case will be read with interest. The following case occurred during the present summer in a subject in my anatomical rooms.

The two sides of a very deeply divided uterus having attracted notice, in the examination of the pelvic cavity, the entire pelvic viscera, with the external organs, were removed for careful examination. The bladder and rectum were normal. The recto-vaginal pouch of peritoneum is divided by a septum, extending from the left side of the front of the rectum, downwards and forwards to the middle of the top of the uterine commissure. This septum of peritoneum has a free concave edge three inches in length, when the rectum and uterus are held apart, the hinder two-thirds of the edge being sharp, the uterine third bifurcating, so as to present a narrow triangular free surface of peritoneum, the edges of which passed to the inner margin of the corresponding uterus. The right recto-uterine pouch, measured from the middle of this septum, is two inches in depth, the left an inch and a half. The peritoneum is thus continued farther down on the right side than on the left, covering from half to three-fourths of an inch of the vagina on the right side, but merely reaching to the vagina on the left. There is no similar utero-vesical septum. The peritoneum reaches down three-fourths of an inch upon the united cervix, but not so far as to touch the vagina. The contents of the broad ligaments occupy their usual relative position.

Turning next to the vagina, the outer half presents appearances as if of a ruptured septum along both the anterior and posterior walls. The upper vestige hangs down as a thick fold of the lining membrane, triangular in shape; the anterior edge, beginning just below the meatus urinarius, measures $\frac{3}{4}$ of an inch, meeting the lower edge at a sharp angle; its attached edge is $1\frac{3}{4}$ inch in length, just one half the length of the vagina. The lower or posterior vestige is less regular and subdivided into two parts. The posterior is a prolonged tongue or crest-like projection about an inch in length, pointing obliquely forwards, surfaces lateral; the attached margin, about an inch in length, beginning $\frac{3}{4}$ of an inch back from the orifice of the vagina. The fore part of the lower vestige is continuous with the hinder part, but is less elevated, being from a quarter to half an inch in height, and stretches obliquely forwards to the orifice of the vagina towards the (subject's) right side, just where the floor and right side of the vagina meet. All of these membranous projections are smooth, and along their attached margins are continuous on each side with the vaginal mucous membrane.

I have been thus particular in describing these portions of membrane, from the bearing of the details on the interesting question whether they are really the remains of a former septum. They did not strike me as such at the very first, but after careful examination, and bringing them towards each other, I was led to form that opinion of their nature; the septum having crossed the mouth of the vagina downwards and somewhat to the right side.

There are no such remains in the uterine half of the vagina, which is smooth throughout. No median ridge even can be seen, but the finger can recognise a sub-mucous thickening along the middle line on both the anterior and posterior walls. Nor are there any lateral rugæ on the uterine half of the vagina, but they are seen in the outer half to pass off from each side from the attachment of the supposed septal remains. If these remains are what accoucheurs speak of as those of a former vertical hymen, it would be more correct to speak of vertical hymen as the septum of a partially double vagina.

Passing next to examine the os and cervix, from the vagina, each uterus is seen to have a separate os, situated a short distance within a common external os, which is notched above, opposite the septum. This is seen in Fig. 2. The common external os measures ten lines across, and when opened up, without stretching, it measures five lines antero-posteriorly. The cervix does not project much into the vagina, merely its rim; the posterior lip descends a quarter of an inch farther than the anterior, but does not bulge more; the anterior lip is much the thicker of the two, and presents a groove running into the notch, which is placed a little to the left side. Within the external common os are seen the separate uterine apertures, of an irregularly elliptical shape, placed somewhat obliquely, the right outwards and rather upwards, the left outwards and rather downwards, which is partly due to the direction of the septum. Each os uteri measures 3½ lines across, but each readily admits the handle of a scalpel 5 lines broad. The septum is narrowest where it joins the posterior wall of the cervix, enlarging towards the anterior wall, and more so towards the right side, exactly as seen in Fig. 2. The distance of the septum from the common external os is, in front, three lines, behind, six lines; this being due partly to the edge of the septum advancing as it passes to join the anterior wall, but mainly to the greater length of the posterior lip, as already noticed.

Turning now to Fig. 1, the external form of the uteri is seen. The fissure extends through the fundus and body, while the two uteri are united externally in a common cervix, down the centre of which extends a groove, indicating the attachment of the septum and the internal duplicity of the cervix. The length of the externally united cervix in front, is just an inch, behind ¼ inch more, owing to the greater length of the posterior lip. The breadth, at the middle, is 1¼ inch. The sides of the neck are not symmetrical, the right sloping downwards and inwards, while the left is nearly straight, and the groove is placed a little to the left side.

The externally separated uteri are, each, two inches in length. The right is the broadest by $\frac{1}{8}$ inch, at all its external measurements. The greatest breadth of the left, just below the round ligament, is an inch; its narrowest part, just above the commissure, is half an inch. There is a marked though not abrupt constriction of this part in both uteri, and as the two uteri are moved to or from each other this is the part which yields or is twisted. The gap between the uteri varies according as they are held, but appears naturally as I have represented it in Fig. 1. Its width at the top, from fundus to fundus, is $2\frac{1}{2}$ inches, sloping to $\frac{3}{4}$ inch just above the commissure.

Fig. 3 shows the form and size of the cavity and thickness of the walls. After being slit open the cavity is apt to appear larger than it naturally is, but I have endeavoured to give the correct sizes in the drawing—viz.—Left side, from top to opposite union, $1\frac{3}{4}$ inch, neck $\frac{3}{4}$ inch. From left os to common os, $\frac{1}{4}$ inch in front, and $\frac{1}{2}$ inch behind. The cavity of the right uterus is the same in length, but half a line broader at every part. Breadth of left cavity, at broadest part of body, five lines; narrowest part, just above commissure, two lines or rather more; middle of cervix four lines. As usual there is no abrupt constriction or fold to mark an internal os, but there is the narrowing upper end of the elliptical cervical cavity, which is succeeded by a narrow portion on both sides from $\frac{1}{4}$ to $\frac{1}{2}$ an inch in length. The lower end of the darker shading in Fig. 3 indicates the situation of the proper termination of the separate cavities, corresponding to the two apertures in Fig. 2; but there is no abrupt mark there naturally, as the darker shading might otherwise lead the observer to suppose. The only markings visible on the surface of the cervical cavities are several irregular longitudinal ridges separated by upwardly arched recesses, as seen in the drawing. They are present also in the anterior wall and sides, and occur in the lower two-thirds of the neck, extending through each os into the short common portion of cervical cavity. Though not arranged exactly alike on the two sides, they are on the whole about as numerous on the one side as on the other, perhaps more deeply marked in the right cervix.

The Fallopian tube is open on both sides, easily admitting a good sized lachrymal probe. The cavity of each uterus rises into a short cœcum to the inner side of the Fallopian orifice.

Returning to Figure 1, it will be seen that each fundus rises $\frac{1}{6}$ inch above the level of the Fallopian tube; that there is a considerable interval between the latter and the ovarian ligament; and that the round ligament is large, flat, and anterior, and considerably lower on the left side than on the right. The Fallopian tube is $4\frac{1}{2}$ inches in length on both sides, and natural. The right ovary measures $\frac{3}{4}$ by $\frac{1}{2}$ an inch; the left $1\frac{1}{8}$ inch by 5 lines, and is on the whole rather larger than the right. Both ovaries are sharply and equally fissured on the surfaces.

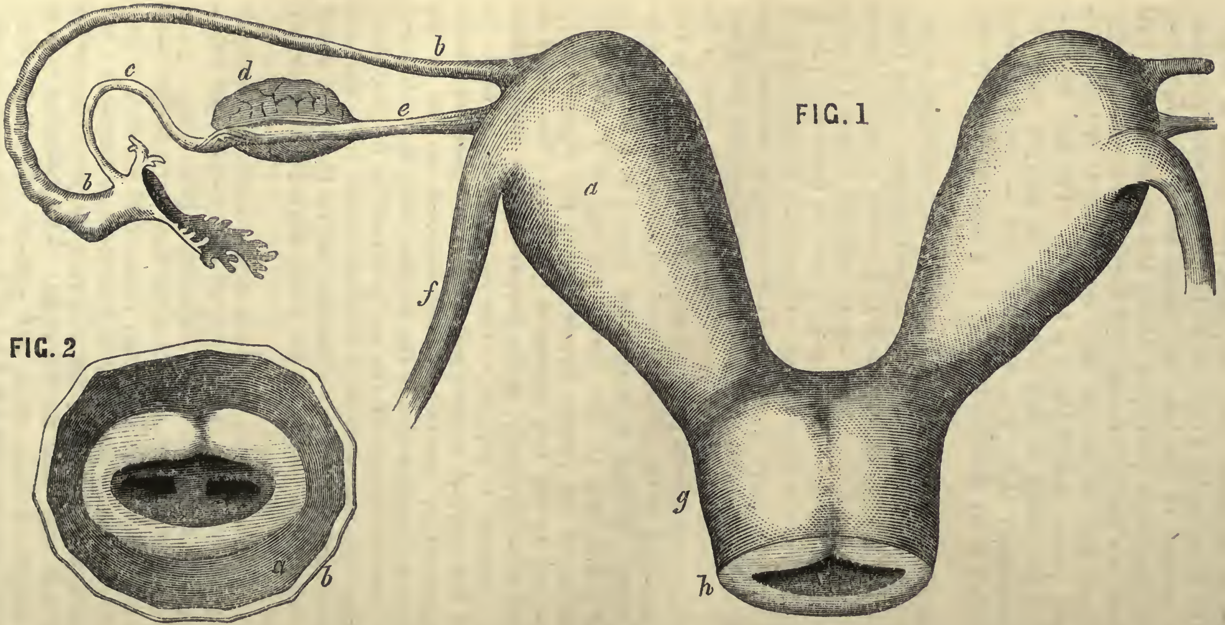

Fig. 1. *a*. Right Uterus. *b*. Fallopian Tube, and *c*. its connecting band to *d*. Ovary. *e*. Ovarian ligament. *f*. Round ligament. *g*. Cervix, externally common to both uteri, and median groove over septum. *h*. External common os, with notch at septum.

Fig. 2. Cervix and os Uteri, surrounded by upper end of Vagina. *a*. Vaginal furrow around cervix. *b*. Divided wall of Vagina. The apertures of the two Uteri are seen, separated by the septum.

FIG. 3

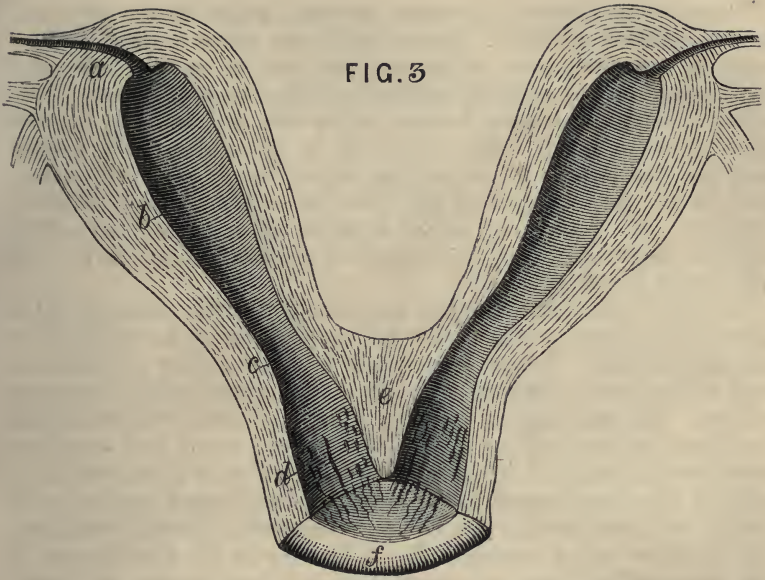

Fig. 3. Section showing the size and form of the cavities, etc., seen from before. *a*. Canal of Fallopian tube. *b*. Cavity of body. *c*. Internal os. *d*. Cavity of neck. *e*. Septum. The edge of the dark shading on each side of the lower end of the septum indicates, artificially, the situation of the separate uterine mouths seen presenting in Fig. 2. *f*. Posterior lip of common external os.

I trust that these numerous details will not be reckoned valueless by those who are aware of the various scientific and practical questions which arise in connection with abnormalities of the uterus. Human development finds us a ready explanation of the uterus bicornis ; and adult forms, in the wider range of the vertebrate type, find us an explanation of the case of completely double uterus and vagina, as in other cases in which the human body may present a typical abnormality which the human embryo does not normally pass through ;—recollecting always that what these explain is merely the form the abnormality takes, not why or how abnormalities occur, which we do not understand in the least. My sole intention, however, in this communication is to record the case. Those who desire to examine into the whole question may consult the second volume of Rokitansky's Pathological Anatomy, the elaborate article on the Uterus and its Appendages in Todd's Cyclopedia of Anatomy and Physiology, by Dr Arthur Farre ; and the recent admirable work on Abnormalities of the Uterus by Professor Kussmaul of Heidelberg. Those who have not access to the latter work, will find a well written analytical review of it in the *Edinburgh Medical Journal* for July 1860.

I may merely observe here that the term double uterus may refer to two different varieties. One, in which the uterus is divided internally by a septum, more or less complete, into two cavities, but without necessarily any external indication—(the bilocular uterus). The other, in which the uterus is more or less bifid or fissured externally (the uterus bicornis). This may occur in all degrees, from a mere notch at the fundus to a complete separation of the whole uterus, and in the latter case, each may have its own completely separate vagina. The case I have related is one of external duplicity affecting the fundus and body, with internal duplicity of the neck, or of almost the whole of the neck.

In such a case, superfœtation might occur, as the blocking up of one os by pregnancy would not necessarily shut up the aperture of the other uterus. I have been unable to procure any previous history in this case, except that she had been a widow and was 50 years of age. The markings on the abdominal wall, and a cicatrix at the fourchette (which my colleague Dr Keiller noticed and considers strongly indicative of delivery), together with the absence of very regular rugæ in the vagina and cervical cavities, would seem to point in one direction, as also, perhaps, the greater size of one of the uteri, and the torn vaginal septum. But inequality in the development of the two uteri, and to a very much greater degree, is not uncommon, as Dr Kussmaul has shown. Under the circumstances of such an anatomical variety, much dependence probably cannot be placed on the form and state of the common os externum, which otherwise might have helped the view that there had been pregnancy. On the other hand, the nearly equal size of the two separate apertures, and the very similar state of the markings on both cervical cavities, would seem to show either that there has been no pregnancy, or that both uteri have been pregnant, which in similar cases has occurred, either separately, or simultaneously, or by superfœtation.

Part Second.

REVIEWS.

Mind and Brain: or, The Correlations of Consciousness and Organization; with their Applications to Philosophy, Zoology, Physiology, Mental Pathology, and the Practice of Medicine. By THOMAS LAYCOCK, M.D., F.R.S.E., etc., etc., Professor of the Practice of Medicine and of Clinical Medicine, and Lecturer on Medical Psychology in the University of Edinburgh. 2 Vols. Edinburgh: Sutherland and Knox. 1860.

THE union of soul and body—of mind with matter, and the reciprocal action of each upon the other, are subjects that have occupied the attention of thinking men in all ages,—ever since men began to speculate at all. The nature of the conscious being every man calls himself, and feels himself to be, and the connection between *himself* and that material organization which is *his*, not *him*, and which may be changed, and increased or diminished, and yet *he* remain the same,—the varying states of which, however, so powerfully influence him,—are matters that could not fail to arrest the attention of thoughtful men. In our own profession, where these subjects are kept constantly before our eyes, the theories regarding them have been endless. And among the metaphysicians, the speculations regarding them have been as numerous and as unsubstantial. The two parties have proceeded in different ways. Physicians, studying with laborious minuteness the most complex structures of our frame, and thence inferring the nature and operating laws of the sentient principle which actuates it; philosophers, questioning and analysing their own mental processes, and thus seeking to discover the nature and the powers of that entity which influences and guides the organism. It is from the separation of these two modes of inquiry that, Dr Laycock alleges, has proceeded the want of success which he ascribes to both, and which he hopes to remedy by *correlating* them; that is, if we understand him, by combining the two together, and prosecuting *pari passu* inquiries into the laws of thought, and into the minute anatomy and laws of the nervous system, and of every tissue that performs functions at all analogous to a nervous system among the humblest classes of living beings. We say with all sincerity, "if we understand him;" for without prejudging, still less denying, the merits of this work, we must say that it is the most difficult and obscure book that we ever read. The needless employment, sometimes the invention of technical terms, often barbarous, the intricacy both of thought and expression, and the appearance of constant effort to be profound and learned—or, as a friend of ours expressed it, "to dive deep in shallow water,"—have made the study of it one of the most fatiguing operations we ever performed. There is, nevertheless, much in Dr Laycock's book to interest and instruct a philosophical thinker, if it were only a little more *come-atable;* and we shall proceed to give the best account of it we are able.

As man feels, thinks, and wills by his nervous system, whatever he is, is the expression of its functions. There is an immaterial energy ever operating as an adapting force in the vital processes, whose laws can only be determined by ascertaining those of the living structures by which these are manifested. The brain and nervous system, therefore, are the proper objects of mental science. Such are, very briefly, the principles which Dr Laycock enunciates in his first chapter. His second chapter we pass over—as it does not very much elucidate his "Method," which the preliminary dissertation is employed in explaining—with the remark, that the Doctor, according to his own showing, has undertaken a subject of vast sweep and compass; for he says that a mental science founded on a philosophical physiology is co-extensive in its scope with created things,—investigating the action of physical forces to determine their relation to the forces of life and organization,—the vital forces, to develop their relation to mind,—and the phenomena of mind itself in relation to physical and vital forces, as operative in the brain, that it may deduce principles applicable to the material well-being, and the highest moral and spiritual interests of man. Before proceeding to explain formally his own *method*, Dr Laycock, in his third and fourth introductory chapters, endeavours to show how previous inquiries have failed, and to determine the causes of their failure. This he ascribes to an imperfect conception of the objects of inquiry, and the consequent assumption of erroneous principles, and imperfect observation of phenomena, mainly due to theological prejudice or preconception, —statements so general, that they communicate little or no information. Metaphysics have broken down, we are told, because the metaphysicians ignore physiology. Physiology limits itself to the phenomena of life, excluding the correlation of thought and consciousness; and common experience arrives at no clear conception of either, although, as Dr Laycock shows, there is embodied in popular aphorisms, and involved in ordinary language, as in generic terms, much important truth, and many valuable generalizations founded on comparisons essentially correct and just.

A dissertation here occurs on the failure of existing systems to explain or alleviate Insanity, followed by a criticism on some views of Dr Carpenter, regarding the distinction between the vital principle and mind; after which, by a quotation from Cabanis, we get almost our first glimpse, though an indirect one, of the views Dr Laycock intends to support. It is this irrepressible tendency to digression, and the needless load of quotations and references, that make our author so obscure, and injure a book that contains much valuable matter, and many important views, which frequently are supported with much ingenuity and learning. The views of Cabanis were commented on by Mr Lewis—though, we believe, with very different intent from Dr Laycock—with high praise, as connecting intellect and will with vital actions, making the one correlative with, if not the cause of, the other. However highly Dr Laycock may estimate the views of Cabanis, we take leave to remind him that physiological psychology, to say the least, is as yet in as undeveloped a state as metaphysical science; and that the attempt to found the one on the other, as in phrenology, has been anything but conclusively successful, and must, till both, especially the former, is much more advanced, be therefore more hypothetical, and less a matter of legitimate induction, than he seems inclined to believe. And, further, as physiology has only within the last twenty years made those rapid strides, which, in Dr Laycock's opinion, render it competent to that part of the investigation, which he now believes it fit to undertake, students of mental science did right to investigate the subject by a diligent introspection of their own consciousness alone,—admitting, as they always did, especially Dr Reid, the *general* relation between the impressions on the organs, nerves, and brain, and the perceptions and sensations corresponding to these; and, therefore, Dr Laycock's criticisms, on the older metaphysicians at least, absolutely fall to the ground.

The chapters containing remarks on the value of the study of the Instincts of the Inferior Animals, and on the prejudices arising from Speculative Theology, contain some very good and valuable remarks; and, after these, our author enters into a detail of his own "Method," of which he gives a summary at the end of his First Part, which we would willingly quote if our space permitted, but which we must condense, if possible. First, then, Dr Laycock proposes to inquire into the experience of man as to his states of Consciousness ("Empirical Psychology"); next, to examine the laws of Existence ("Ontology"); then to examine the laws of Mind as an ordering force to ends (Teleology, or Mental Dynamics). Thus, he says, we examine Consciousness in relation to vital phenomena; Existence in relation to vital and physical forces; and then the correlation of Mind, physical and vital forces, in relation to design in creation, or the doctrine of Ends. "This will bring the highest manifestation of Mind as a creative and regulative power into synthesis with creation, and consecutively into synthesis with the human mind." Now, we have omitted no words in this abstract that make the meaning at all clearer. The last sentence is *verbatim*. And we ask if we have not reason to complain as we have done of our author's obscurity? And surely, when he proposes, as he does in his preface, to make the work a text-book, if we could suspect so learned and grave a person of jesting, we would believe he meant it as a joke, though a joke at which we grievously fear his students would have very little reason or inclination to laugh.

Having finished the exposition of his "Method," Professor Laycock next proceeds to consider Metaphysics, heading his chapters, "The General Principles of Experience, Empirical Psychology, and Ontology." The whole of this subject lies rather out of our way; at least is generally considered, perhaps to an undue degree, to do so. We can only afford space for a very few remarks, as the connection between this portion of the volume and what follows makes it impossible to pass it over. The great point which Dr Laycock inculcates, is the necessity of considering every mental process or state, in connection with the varying conditions of our organism, as that which alone reveals them to us, or makes us capable of knowing them. He therefore censures all previous writers on mental philosophy, for limiting their inquiries to the facts revealed in consciousness alone, and insists that all the phenomena of life, and consequently all the corporeal states on which these depend, should be included in the investigations of the psychologist. Now, as vital phenomena are, many of them, unattended with consciousness, this very fact would seem to form as natural a division between two lines of inquiry as many divisions of human knowledge permit of. Nor are we prepared to admit, without considerable qualification, the disparaging strictures which Dr Laycock passes on the cultivators of metaphysical studies generally. There is a considerable resemblance between the views and reasonings of Dr Laycock and the phrenological mode of dealing with these subjects, on which we shall say a word or two further on.

Dr Laycock dwells at considerable length on unconscious states of existence, and the related subject of latent consciousness, discussed by Sir Wm. Hamilton, connecting them with his own views of unconscious cerebral action; and thus seeking to show that Mind and Life are identical; that wherever there is the latter, there is also the former, only in a lower degree of evolution,—thus connecting the faculties, even the highest, of human beings with the instincts of animals all down the scale. Believing the one proof of Life—*i.e.*, Mind—to be the adaptation of means to ends by an organism, wherever he finds this, he admits the existence of mind, and seeks to explain its reality, or at least to render its existence credible, by insisting on the unconscious character of part of own mental states and acts.

Dr Laycock constantly expresses his belief of the immateriality of Mind, and we have no intention of raising a religious discussion with him. But there are passages and phrases in the book, that would admit, at least, of a different interpretation; and many a man announces principles, the consequences of which he does not see and would not like to acknowledge. There is a passage in Sir Wm. Hamilton's second Lecture on Metaphysics, of which Dr Laycock has quoted a part, not quite fairly we think, which we recommend to our readers' attention, and to the Doctor's own consideration. Dr Laycock's quotation is intended to show the obstacles opposed to free inquiry by preconceived opinions. Nothing can be further from its real intent. The object of it is to show (and this is done with Sir William's usual clearness and vigour) that we derive our notion of power and of freedom solely from an examination of our own consciousness; that it is from the ideas of power and freedom thus revealed to us as residing in an immaterial substance, that we are alone warranted in extending the same view to the phenomena of nature, and thus ascending to the conclusion that an all powerful intelligence, acting voluntarily (according to modern usage, perhaps we ought to say volitionally), is the first cause of all that exists.

The last chapter of Dr Laycock's Metaphysics deals with the recondite ideas expressed by the words, the "Absolute," the "Contingent," the "Relative," and so forth; but as it is occupied with subjects so subtle, that, when we attempt to express them, we are never sure but we are imposing upon ourselves by merely verbal refinements, we pass it over, and proceed to the "Correlation of Causes." The laws of nature, Dr Laycock says, are certain unvarying uniformities observed by mankind, and formularized in language; and Force is that which compels to this unvarying course of events; so that the terms Law and Force both alike imply a fixed order of events. The most universal law of nature is that of gravitation, and the apparent deviations from it are *only* apparent, and are due to derivative and contingent laws, which it is the business of science to investigate. Life resists the ordinary physical forces by virtue of certain special forces, hence called Vital. These vital forces are only contingent; the great uniformities necessary. The latter correspond to the "Universal;" the former to the Particular,—in fact, are only derivatives of it, and their antagonism to it only apparent. But as thought and instinct are both the manifestation of a law of necessary adaptation of means to ends, the physical forces themselves are but derivatives of this, of which consciousness and thought are the highest evolutions. Mind is thus, says Dr Laycock, the first cause, the unchanging causal element in all our cognitions of ourselves and of the universe.

In the chapter on the Correlation of Physical Forces, our author gives an account of the various hypotheses, of which the last quarter of a century has produced many, regarding the convertibility and transference of forces. It contains much learning, and shows a very intimate acquaintance with recent physical and mechanico-chemical speculations. We have not time to dwell on it. Dr Laycock seems to us to regard some of these speculations, however seductive and elevating they may be, as resting on a more secure basis than perhaps they really do; but we agree with him in this, that they all show what Sir Wm. Hamilton states to be the necessary progress of human inquiry, the tendency to establish unity of causation.

The next chapter carries on the notion of the convertibility of physical forces, through the vital and mental forces; and Dr Laycock's ultimate conclusion is, that from the fundamental intuitions of our nature, which he holds to shadow forth to us the archetypal ideas of the Original and Supreme Mind,—from the universal consent of mankind,—and from the very implications of language, which even those most opposed to the argument from final causes find themselves obliged to employ,—the great law of Design correlates and controls all the physical and vital laws. We find, then, that Dr Laycock adopts after all the views of many, nay of most, of the philosophers who have preceded him, regarding the great teleological doctrine, or, as it is more generally termed, the argument from Design; the difference between him and them being not in the conclusions, but in the mode of developing them,—which enables him, as he believes, to correlate Mind, *i.e.*, the power of adapting means to ends (acting as a force), to the great physical laws, to the vital forces, and to all their derivative laws and all their complex combinations. In some of his chapters Dr Laycock expresses himself as if the designing energy resided in the organisms themselves, as when he reminds us of the essential brotherhood that exists between man and the inferior animals, down even to an oyster. As we go on, however, we find that Design is the property of the Supreme Mind, which works by forces acting through matter, especially organized matter; so that the oyster differs from us in this at least, that he is not aware that he is a "concrete ego." Now the law of Design controls and correlates all forces, physical and vital, which again appear to be convertible or resolvable into one—motion in atoms, either molecular motion or in masses; and force is the power which makes law operative. Is, then, the force which makes the law of Design effective identical with gravitation, with heat, and the other forces of matter; and can we conceive these to exist without matter? Is thought itself, which we are told we cannot conceive without organization, a material product, or is it force? and how do we conceive of Deity? We suggest these questions as indicating some points which Dr Laycock raises for discussion, and because, whatever advantages Dr Laycock's method may possess, it at least does not seem to us a road that is clearly pointed out, or at all easy to follow. The conclusion seems to be, that ideas, which are variously classed and designated, coexisting with and correlating certain vital changes, may be accepted as representative of the ideas of the Divine Mind; that the existence of these, harmonizing as it does with the dictates of experience and the observations of science, fully warrant us in applying the law of Design to the explanation and evolution of all the organic sciences.

We now proceed to give an account—still more cursory, we fear, it must be than what precedes—of some of these applications; for space obliges to pass over whatever we can. The first subject discussed is headed "Biology." It begins with the fundamental conditions of Existence, which are stated to be Cause, Matter, Space, Time, Change. All these have, we are told, correlative ideas in the mind of man representing those of the Supreme Mind, as causal antecedents, according to the law of Design, of existing phenomena. The nexus between these intuitions and the many derivative laws discussed in this chapter is not always kept in view. In fact, too wide a range is attempted; for the revolutions of the heavenly bodies are discussed as the analogue, or at least as perfectly illustrative of vital phenomena; that is, the form of the planetary orbits, dependent upon the action of the centrifugal and centripetal forces, is said to be identical with the antagonism between the physical and vital forces, both exhibiting the same general idea or law—stability with continual change. Incessant change with the permanence of the organism and the species, and the adaptations to this end, are "inseparable in the order of vital phenomena." The consideration of Existence in space comprises the important subject of Zoological Morphology. The form of any thing, Dr Laycock goes on, is due to the action of force on it or in it. A straight line is the first law of motion, and a curve the result produced by a deflecting force; and as this double motion is the primary manifestation of force, the lines forming the visible limits of a thing in space are curves. Morphology, therefore, is based upon the correlation of the forces in and around things. Into the details of this part we cannot enter. It is as complex and intricate as the rest of the book; and we had marked some passages where Dr Laycock has expressed himself in a way that seems to contradict the principles he wishes to establish. But it is full of information,—very learned, and very ingenious; and will deeply interest any one who will go over it carefully. The concluding passages, on what the author calls the Law of Perfection, and which is apparently meant to settle the great question of the Origin of Evil, might well have been spared. This is a subject so dark and so fearful, that the greatest intellects must approach it with awe. Every attempt to solve the problem has proved an utter failure; and it does not impress us favourably when a writer disposes of it in the summary and compendious way in which our author deals with it.

In the second volume Dr Laycock proceeds to deliver his own views of Philosophical Psychology, of Mental Physiology, and what he calls Mental Organology. We find it quite impossible to go over this second volume even in the cursory way that we have done with the first: we can only indicate and notice some salient points. We pass over the chapter on the "Substratum of the Conscient Mind," which mostly repeats views expounded in the first volume, regarding the correlations of conscious mind to life and organization on one hand, and to the creative mind on the other; and willingly giving the go-by to our old friend the "concrete Ego," we come to the question, "Is feeling a cause of adapted movements?" This question Dr Laycock answers in the negative. Now what is meant by adapted movements? Our volitional movements are all adapted, as when we grasp anything. This is scarcely the meaning of our author, we imagine; and yet some of his expressions leave it anything but clear how much or how little he includes under the term, which itself is a very ambiguous one. After a very brief summary of the doctrines of Reflex Action, as expounded by Unzer and Prochaska, he expresses his strong dissent from Dr Carpenter's extension of Dr M. Hall's excito-motor doctrines respecting the action of the spinal cord to what the former calls sensori-motor phenomena, and affirms the unconscious character of reflex acts (all we presume), and their entire independence of consciousness. He says it is a settled principle that, in feeling animals, it is not to the feeling that the adapted movements of alimentation and the like are due, but to the processes by which force is developed and transferred, for the purpose of producing them as a part of the plan of the organism. This principle, he adds, applied to the vegetative processes of the brain, is of the highest importance to the elucidation of the relations of thought and will to the encephalon. "Upon this extension and application of the principle to purely mental phenomena, which I claim as peculiarly my own, must be based all the doctrines of corporeal concurrence in changes of the consciousness, and all the correlations of the laws of life and thought." These adapted movements take place in embryo cells, and in the parts of animals severed from the encephalon,—the acknowledged seat of feelings. Therefore, Dr Laycock urges, such movements are the result of the vital forces according to the derivative laws of the great law of Design, the "lex nostri conservatio" being the fundamental law of all, even the simplest organisms. The feeling of pleasure or of pain, then, belongs to the whole organism of a conscious animal, as a causal idea. It is the correlative of the law of adaptation to ends,—the primary law of life; and as such, in relation to other states of consciousness as a fundamental intuition.

We have given Dr Laycock's views as much at length and as much in his own words as possible on this subject, to give our readers, as far as we can, some idea of this part of the book, because it brings out the fundamental views of our author,—which we apprehend to be something as follows:[1]—Mental force, or the law of Design manifested in the realization of archetypal ideas, correlates all the physical and vital forces. These, acting on the ultimate molecules of matter, develop "substrata," through which are brought into action all the processes necessary to the preservation of the united organism (lex nostri conservatio), however humble—as a zooid—or reaching the highest complexity, as a human being. The higher we ascend in the scale, mere instincts, which in the humbler organisms exhibit themselves with a comparatively simple structure, pass into mental faculties, and an appropriate differentiation of nervous tissue is developed, fitted for their exhibition. Hence every one of our fundamental intuitions is correlative of a "Teleiotic idea,"—that is, an idea of design tending to completeness or perfection,—and is also the basis of a faculty, or group of faculties, in the conscious being, with the encephalic tissue or group of tissues—their vital substratum—as well as of all their apparatus of external relation, such as organs of sense. There is, no doubt, a considerable amount of originality in this view; and it is supported ingeniously and with great research, and applied often in a very interesting manner, both to the instincts of the lower organisms and the structures by and through which these are manifested, as well as to the parallel evolutions of the same idea of design in the higher faculties of the vertebrates, and finally of man himself, with the more complicated differentiation of encephalic and nervous structure which these render necessary—still produced by mind force (Dr Laycock says), controlling and passing into the physical and vital forces. The multitudinous ramifications through which Dr Laycock pursues this idea, our fast lessening space warns us that it is impossible for us to follow. We cannot even stay to discuss its merits in any lengthened general reasoning. At times the view seems clear enough, and to apply to cases it is proposed to illustrate; at other times it assumes proportions so vast, and a form so vague, that we are at a loss to tell whether, like many other speculations of a similar kind, it may not be a misty shape which would vanish into thin air if we attempt to grasp it. We in vain desire to know if, after all, we are still dealing with an old friend with a new face—the old-fashioned argument from Final Causes—or in what precise way, or how far, Dr Laycock differs from preceding reasoners. One thing is clear, however,—it certainly will require some good and popular exposition, before Dr Laycock's views be generally appreciated or received. Witness the following luminous sentence, which does not stand alone, but is one of many others we could quote: "Doubt arises when the teleorganic changes going on in the ideagenic substrata are minutely differentiated; and consequently, feelings of doubt are correlative with indeterminate and indefinite vital sequences." There is also a good deal of looseness in the analogies by which the view is supported, and something very hypothetical in the way which it is applied to explain and connect facts. As, for example, in the part on "Mental Physiology," at which we have now arrived; where our author, seeking to illustrate the "Teleiotic idea of Unity," on which brain tissue is finally evolved,—the first duty of an encephalon being its unifying function or power of co-ordinating the whole human economy,—finds the parallel of the social feelings which lead men to combine for common purposes in the common receptacle for nutrition of the hydrozoa, as well as analogies to the highest forms of development, because the germ of the highest animals is a sac whose wall is divisible into two membranes; nay, even trains of ideas and conscious movements are held to be analogous to the associated changes of the digesting and excreting processes of these simple tissues,—the brain being, if not a differentiation in structure, at all events the evolution of a fundamental idea operative in them to combine the external and internal relations of the organism into unity. The anatomical investigation of the cerebrum is then sketched historically; and Dr Laycock declares a strong, though not quite unqualified, adherence to phrenology. Now we venture to remark, first, that although we even granted the truth of their fundamental principles, the phrenologists failed completely in establishing a mental science, independently of the facts given in consciousness; for grant that a certain portion of brain or nervous matter be either large in size or active in character—in those, for example, who are commonly called *conscientious* people—the purely mental nature of the inner feeling or process is not in the least elucidated. Whether there be a sense which determines upon certain qualities of actions, or whether a more complex process goes on, in which certain intellectual faculties take a part, and a peculiar feeling arises after their decision has been pronounced, are questions, and important ones, which can be answered by an appeal to consciousness, and by that alone. Second, Dr Laycock does not appear to us successful in answering the oft alleged objection to phrenological opinions drawn from the appearance of the hemispheres, as showing no lines of demarcation corresponding to the alleged special organs. He says that there is as little reason to believe that a similar tissue may not subserve for the evolution of ideas of various or diverse character, as there is to believe that the polype does not digest because it has no abdominal glandular apparatus, and has no external relations because it has no nervous system. But surely the digestion of a polype is not the same as the digestion of a man; and surely the external relations of the polype are not the same thing as the evolution of man's complicated mental processes, which, one great object of Dr Laycock's work is to prove, result entirely from differentiation of structure,—a difference which upon his own principles ought to be palpably marked, where yet we find structure and appearance homogeneous. And thirdly, Dr Laycock takes no notice whatever of the anatomical objections especially urged by Sir Wm. Hamilton.

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[1] Whether Dr Laycock means to say that mind-force is identical with, and convertible into, the physical and vital forces, we really cannot tell, though we have tried hard to find out.

From the views which Dr Laycock conceives he has established, he is of opinion that he is entitled to adopt an "idealistic" basis of arrangement, not only for the faculties of man, but also as the sole foundation of a sound zoological classification. That is, as the development of any and of every organism is the realization of an idea in time and space by the motion and transference of force, and as certain great ideas are found to pervade the whole of organic nature, we ought both to class inferior organizations according to the ends they fulfil, *i.e.*, the teleological ideas they reveal; and to regard their functions as "teleiotic homologies" of the similar though higher endowments of more perfect animals, even up to man, effected by a more complicated and highly differentiated structure, but still effected by the same law,—Mind-Force subordinating or passing into the various physical and vital forces. This view of teleological homologies is pursued through the whole subject of Mental Physiology, under which title are included the primordial instincts of the humblest creatures and the highest developments of artistic ability in man; and during its course we have a great variety of episodical discussions.

But we can follow our author no further at present, even in the very imperfect manner we have hitherto done; and must close without having arrived at his "Mental Organology," which comprises his views of the anatomy and functions of the nervous system and brain. We regret this the less, however, because we may perhaps resume the subject at an early day, and compare present views with those entertained at the period when one of the greatest, if not the greatest, of all the distinguished men who have preceded him filled the chair Dr Laycock now occupies.

Before concluding, we would say a very few words on a subject which Dr Laycock has brought before the public in a note appended to his second volume. Dr Laycock claims to have developed the opinions which Dr Carpenter has expounded, under the name of "Unconscious Cerebration," before that gentleman had published his physiological works; and complains that Dr Carpenter has ignored his title to priority. After reading over the note, we are inclined to think that the Doctor has substantially made good his claim, at least, to the groundwork of these views, and that he has received scanty justice both from his friend Dr Carpenter, and perhaps from the profession at large. But we sincerely trust that the concession Dr Carpenter has made to him will be satisfactory to his feelings, as it is certainly creditable to his reputation. Nothing is more painful than to witness such misunderstandings between zealous and upright cultivators of science; and we should very sincerely wish to see any breach healed that existed between the two. We cannot, however, part from Dr Laycock without pointing his attention to the difficulty Dr Carpenter complains of in understanding his positions. If so accomplished a person as Dr Carpenter, and one so familiar with physiological subjects, finds it difficult to follow him, it is not wonderful if obtuse drudges of reviewers should be perplexed and bewildered, as we confess to have been; and it should suggest to him the propriety of assiduously cultivating a clearer and less intricate manner, both of evolving his opinions and expressing them. We now take leave of Dr Laycock; and though we have spoken freely in some respects of his book, we part from him with all the respect due to a zealous, most laborious, and independent inquirer.

Minutes of the General Council of Medical Education and Registration, June 1860.

In our last and in the present number will be found the Minutes of the Proceedings of the General Medical Council for 1860. We are sorry to say only minutes. And even as minutes they are bare, considering what minutes generally are. But for the simple record of various aborted motions and amendments, and the occasional record of the names after a motion, when specially requested by some member, we should not be aware that there had been differences of opinion, or any discussion, or any reasons assigned. Why are reporters not admitted to these meetings? We should like to have the reasons of the Council for considering that their discussions are not of the kind to be reported. The same view was held at one time in the British Parliament—to compare small things with great; but what would Parliament say to it now? The proceedings of a Cabinet must be secret, being a body selected to devise and conduct a policy in the face of hostile powers; but our Medical Council is a representative body, a small medical parliament. When the country has the right to hear what is said by Prime Ministers, Chancellors of the Exchequer, and other dignitaries in the Lords or Commons, why should an intelligent profession be denied the power of glancing over the discussions, and getting a little insight into the views and reasons of such august personages as Dr This and Mr That, sent up to represent and manage for the said profession? We should not think of inflicting on our readers a full report of everything said at the Council Board, but claim for the profession the right, if it chooses to exercise it, through the medical or other journals. We just hint to the Council to consider whether its choosing to assume a close and dictatorial character is not likely to render it unpopular with an intelligent profession in a free country. We trust that at next meeting some members will have the courage to move the admission of reporters.

The resolutions of the Council of last year, in regard to education and examination, will be found in our pages for September 1859. Copies of these resolutions were sent round to the different licensing boards, with a request to know how far each had conformed to them. The minute of June 15th records that these returns were received and read at the Council; but the minute is entirely silent as to which of the boards had and which had not complied. Yet certain we are that all have not. What the Council has this year done in regard to education and examination, is chiefly to re-read the resolutions of last year, and re-adopt them. Last year they came up in the form of a report, and were then "adopted;" and, having been now doubly adopted, we presume that the Council, instead of merely adopting them a third time, will proceed to exercise their power of recommending suspension to the Privy Council against non-compliant boards.

Two of last year's resolutions are, however, not re-adopted. Compulsory registration of students is postponed till October 1861, and the register is to close in fifteen days from the beginning of the session, (minutes of June 23d; Report of the General Committee on Education) not, as before somewhat summarily directed, in a week. Why should the unfortunate student be cut off for an entire session merely because he happened, perhaps from simple ignorance of the rule, to come up when a week, just a twenty-fifth part of the session, has passed?

The Council declines to define what is meant by a "year of study" (minute of June 21st, sections 3, 4, 5, and 6). There is a mystery about this. All they let us know is, that Dr Andrew Wood and Mr Watt in vain moved for the full nine months' study, as a definition of the year; and that Drs Corrigan, Apjohn, and Stokes endeavoured equally in vain to trim the definition to suit those whom we may guess to be the six-months' party. There is no open counter motion, but merely the inexorable secret negative; the reason why, they will not tell. We are not told even what the majority was, or who voted on either side. One thing, however, is plain enough, that the Council does not seem to care much about consistency. If it is of importance that there be four years of study, it must be of importance to say what a year of study is, when the question is one between six months and nine months,—actually half as much again. Then contrast the Council's treating three months as a thing not worth settling about, with its laudable anxiety that the student shall not lose a fortnight of the session! A fortnight, says the Council, is of so great value that a day more will cost the student his year altogether; but as for three months, that is neither here nor there, and we will say nothing about it! The Council strains at a gnat, and swallows a full-grown camel.

The Council proposes (June 23d, Nos. 11 and 12) to publish annually an alphabetical list of students. But to what purpose? The double purpose of registering students is, first, to have a check on professional study being begun before the entrance examination has been passed; and, second, to bring students up early in the session. The registers being closed, and sent in to the Branch Councils, the student cannot procure a registration ticket, without which the boards will not accept his session, and so the two objects of registration are accomplished. Why print annually the names, etc., etc., of several thousand medical students, unless to give work to printers, and registrars, and branch councils, at the expense of the profession? The General Council and the Branch Councils should beware of over-much meddling.

The next regulation (No. 13) is false in principle. If licensing boards were in all cases only licensing boards, they might be trusted very safely to decide on the claims of late-comers for registration; but such decision should never rest with a board which is likewise a school. The temptation is too great. The Branch Councils are plainly the right bodies to whom this responsibility should have been entrusted.

The Council has accomplished, or is accomplishing, one grand result of its existence, a result on which too high a value cannot be set,—the preliminary examination in arts which it has enforced on all the boards. A general lift has thus been given to the whole profession, which in a few years will tell decidedly on its social status and intelligence, as well as professionally. By what means could this have been accomplished but by a General Medical Council with powers? Uniformity, up to a minimum standard, in the general and professional examination of all the licensing boards is thus secured. When the resolution, that "no student beginning professional study after September 1861, be registered, who has not passed an arts examination in conformity with resolutions 2 or 4," is in force, the examination will be in the position of an *entrance* examination to professional study; and the rule, that this entrance examination, when held by the medical or surgical colleges themselves, "shall in every case be conducted by a special board of examiners in arts," and not by the ordinary professional examiners, will ensure that the examination shall be a thorough and impartial test of a good previous education.

The Council considers that there should likewise be uniformity in the standard of arts examination among the various universities for their medical degrees. The last resolution which the Council of 1860 has passed is, "that it is not desirable that any university of the United Kingdom should confer a degree in medicine, whether that of bachelor or doctor, upon candidates who have not graduated in arts, or passed all the examinations required for the bachelorship in arts, or the examinations equivalent to those required for a degree in arts." The latter part of the resolution is essential as applied to our Scottish universities, in which the degree in arts is open only to those who have attended for three or four years in the university; but "examinations equivalent to those required for a degree in arts" may be made open to all candidates for the medical degree, wherever and however they may have obtained their general education.

We trust that it is the intention either of the Medical Council or the licensing boards, to make widely known to the profession and to the public the fact, that the preliminary examination will, after September 1861, be compulsory as an entrance examination. A year's notice is little enough for such an important change; and it cannot now be too widely or too continuously announced.

The question of the value of the license of the Apothecaries' Hall of Ireland, again raised by the letter from the War Office (Minute, June 16), has evidently been keenly discussed by the Council. This anomalous body has occupied a very varied position in the many former proposals for medical reform,—sometimes included, sometimes excluded; and it must have been very gratifying to the Dublin apothecaries to find themselves included in the bill which at last became law. Their license is one of those enumerated in schedule A, as entitling to be registered; but as the Medical Act in itself confers no power, but only extends the field of operation of powers previously possessed by charter, the question arose, whether those registered as Dublin apothecaries were authorized to practise medicine from the circumstance of the society having voluntarily chosen to examine also in medicine, or whether, in accordance with the chartered powers of the society, they were merely authorized to practise "the art and mystery of an apothecary." The rejected candidates for the privilege of practising this "art and mystery" may even, it appears, appeal to the Dublin College of Physicians, who may reverse the decision, and grant to the appellant, without any examination in medicine, the right to practise the said art and mystery. The Council accordingly again find, without pronouncing precisely as to the nature of the art and mystery, "that the license of the Apothecaries' Hall of Ireland is not equivalent to a degree or license in medicine from a university or college authorized to grant such," etc. (Minutes of June 19). This was moved by Dr Stokes, and seconded by Dr Corrigan, the previous counter-motion (Minute, June 16), "That the license of the Apothecaries' Hall of Ireland is a legal qualification to practise medicine," having been moved by Dr Leet, and seconded by Mr Syme. Dr Storrar, on the side of the apothecaries, having required that the names of those who voted on either side be entered, it is instructive to notice the result. The Irish members, who know practically and best what the Dublin apothecaries are, all (except, of course, the apothecaries' own) go with the majority; while, from Scotland, the votes are three against three, the three professorial members going for the apothecaries, and just neutralizing the votes of the three members for the two Edinburgh colleges and the Glasgow faculty. By the minute of June 20th, we observe that Dr Storrar (who, we may mention, represents the University of London) made an attempt to re-open the Dublin Apothecaries question, which, however, was negatived. The idea of the University of London, in relation to the medical profession, is that of raising its status. Whether this aim is likely to be forwarded by enabling persons to enter a liberal profession with the title and taint of the apothecary, our readers may judge; and we can imagine the feelings of the London graduates on beholding the representative of their University as the champion of the Dublin gallipots.

But it is not in the Green Isle alone that an apothecaries' license is unsavoury. In England it does worse than stink. The Apothecaries' Society of London is a very different body from its Dublin congener, in so far that it is authorized to license in medicine, although at the same time a trading company. Before its monopoly of medical licensing for England was destroyed by the Medical Act, it had been the great ogre of the Scotch universities and licensing boards. After the Act, an effort was made still to shut out the licenses and degrees of Scotland and Ireland, by persuading the English Poor-law Board to require an English medical license or degree, while the surgical license continued to be received from any of the three kingdoms. The apothecaries thus hoped still to stab the Scotch and Irish Colleges of Physicians and Universities. The universities and colleges of Scotland reclaimed loudly; the Poor-law Board reversed its decision, and placed the medical as well as the surgical licenses of the three kingdoms on the same footing. The baulked apothecaries, thus losing the bite besides getting the buffet, had only one little stronghold left: one which, to be sure, must have died out, but which, meanwhile, would keep up some demand for the license, and damage the Scot. In the palmy days of the apothecaries' monopoly, their license was an essential qualification for provincial house-surgeoncies, dispensaries, and the like. This custom still prevailing, it is very unfair to the medical graduates and licentiates of Scotland and Ireland, especially of the former, which, much more than Ireland, furnishes practitioners to England. This last injustice, therefore, required to be knocked over; and as the Medical Council could interfere only by the moral weight of an expression of its opinion, Mr Syme moved, seconded by Dr Alexander Wood, that the Council should record its opinion accordingly (Minute, June 20th). With the amendment appropriately proposed and seconded by the two apothecaries' members, one might agree, to the extent that the Council has "no power to interfere" in the sense of compelling, and yet cordially and consistently join in Mr Syme's motion, that the Council "record its opinion." Mr Nussey, the London Apothecaries' member, having obliged the profession by requiring the votes to be recorded, we have results for which, we confess, we were not prepared. We should have expected it to be all Scotland and all Ireland against most of England. And so the Irishmen (except, of course, the apothecaries' own) were again true to a man; and Mr Teale and Sir Charles Hastings rose above local prejudice. But of the six of all Scotland whom we should have expected to go hand in hand to do battle for such a motion, only four—Professor Syme, Dr Alexander Wood, Dr Andrew Wood, and Mr Watt—appear in the majority. The other two Scotch members —Professors Christison and Thomson—declined to vote. Had the motion, practically so important for Scotland, been lost by this proceeding on the part of two of the Scotch professorial members, what would Scotch graduates have said—and what do they say as it is? Our best thanks are due to Mr Syme for the spirit with which, though unsupported by his fellow-professors, he has routed the apothecaries from their last stronghold.

Without any desire to be unpleasant, we must take leave to say, that we would not have expected to find the weight of the University of London thrown into the apothecaries' scale. The University of London, of all institutions, made to try to bolster up a monopoly, and to maintain the influence of a trading company as a portal to a learned profession! How the representative of this university, and those of some other universities diametrically opposed to its principles, have been charmed into supporters of the Dublin and London pots, we are at a loss to comprehend. There must really be an "art and mystery" about these apothecaries! An unsuccessful attempt was made by Mr Lawrence to have the finding of the Council, in regard to Mr Syme's motion, reversed. We regret that a surgeon of Mr Lawrence's standing should have attempted to defend what is wholly defenceless,—either the possession of such a monopoly, or preference, by any board, or the vain endeavour to maintain a connection between a trading company and a liberal profession,—a connection which nothing short of a monopoly could have maintained so long, and which must now begin to cease. The true function and destiny of the apothecaries is that of pharmaceutical societies.

The minute of June 22d contains the report of a committee on a proposed future amendment of the Medical Act, embracing a variety of useful suggestions. The proposed amendment of the fortieth clause of the Act, against the assumption of titles by unregistered persons, is highly necessary, seeing that, as the clause now reads, any quack may call himself doctor, physician, or surgeon, if he does not imply that he is registered, which of course he does not.

The report concludes with a recommendation that all the medical or surgical licensing boards should be permitted to issue and have registered a license in midwifery. This is no doubt the only alternative, if those boards which have accidentally already gained that privilege decline to give it up, or if it cannot be taken from them, which would be the simpler of the two plans. But we question the wisdom of the Council's recommending the universal plan, instead of endeavouring to remove licentiate in midwifery altogether from the register. The London College of Surgeons alone had a right by schedule (A) of the Act to register a certificate for midwifery. But the Act is silent as to what the persons registered on such certificate are entitled to do,—the word midwifery nowhere else occurring in the Act, and midwifery never having been recognised by any charters as a branch distinct from medicine or surgery. Clause 31 merely says that "every person registered under this Act shall be entitled, according to his qualification or qualifications, to practise medicine or surgery, or medicine and surgery, as the case may be, in any part of Her Majesty's dominions; and to demand and recover in any court of law, with full costs of suit, reasonable charges for professional aid, advice, and visits, and the cost of any medicines or other medical or surgical appliances rendered or supplied by him to his patients." Then it appears that the Dublin Colleges of Physicians and Surgeons have succeeded somehow in inducing the Executive Committee to register an L.M. from them. They had no more right to this than any other college,—that is, none whatever; and it was weak in the Medical Council, knowing this, not at once to reverse this proceeding of its Executive Committee, and stop the registration of Irish so-called L.M.'s until a legal claim was established, or at least until other boards obtained a like favour. In this the Council has clearly erred. These few boards may as well at once agree to give it up, as the universal plan will come to the same thing, though at the cost of introducing confusion of titles. The reasons for the contrary recommendation given by the Council have the weakness of reasons sought for in support of a previous conclusion. If the Irish Poor-law Board requires a certificate of midwifery, the Medical Council can say it is wrong, just as they have been telling the English dispensaries that they are wrong in requiring the apothecaries' license, and the Privy Council that it is wrong in requiring a separate certificate in vaccination. And if the Irish boards remain deaf, let them take certificates of midwifery from all the boards if they like; only don't let us have them on the register. As to the other reason assigned, that midwifery hospitals, dispensaries, and other "*self-constituted* examining *authorities*" (rather an incompatible phrase) over which the Council has no control, would issue certificates of midwifery, let them do it; and so long as the Council refuses to register them they will continue to be, as they now are, looked on as not worth the paper which bears them. The practice of midwifery lecturers pretending to give "diplomas" to their students may still linger where the sham has not been detected; but even when finely got up, and couched in Latin, to add to the delusion, they cannot do more harm than deceive a few old women. There would be no reason why separate qualifications even in medicine and surgery should be required, were we beginning to legislate on a clear field. The only reason why it is so now is the fact that certain colleges are chartered for medicine and others for surgery. The legal, and, as things stand, the only practicable method of attaining a true one-faculty system, is indicated by the newly established, and elsewhere about to be established, joint-examination by the Colleges of Physicians and Surgeons. This tends to simplification, and a parallel system for the three kingdoms. Do not, therefore, let us have the confusion of a third and unnecessary qualification on the register. Meantime, if any institution should persist in requiring a separate midwifery certificate, let it take what it likes from where it likes; or, at the most, let each licensing board, in surgery or in medicine, give with its diploma a "certificate" to the effect that the candidate has been examined in midwifery for his diploma of licentiate of the college, and was found duly qualified to practise that branch of medicine (or surgery). The subject of the registration of midwifery certificates may be commended to the reconsideration of the Council.

Part Third.

PERISCOPE.

MEDICINE.

SYMPTOMS OF ENDOCARDITIS, WITH INSUFFICIENCY OF THE AORTIC AND MITRAL ORIFICES; APOPLECTIFORM ATTACK; ALBUMINURIA; PNEUMONIA; DEATH. EMBOLIE OF THE MIDDLE CEREBRAL ARTERY, WITH CORRESPONDING SOFTENING OF THE BRAIN; DISEASE OF THE VALVES ON THE LEFT SIDE OF THE HEART. BY M. LEBERT, PROFESSOR OF CLINICAL MEDICINE IN THE UNIVERSITY OF BRESLAU.

During the last few years, numerous observations of embolie of the cerebral arteries, and of consecutive softening of the brain, corresponding to the parts which receive their blood from the vessels, the sudden obstruction of which has altered the nutrition of the cerebral matter, have been recorded. If the fact is at present well established, that arterial embolie is in many organs the cause of softening, or of gangrene, it is no less true that few cases have as yet been published in which the observer has been able to follow step by step, and to diagnose during life, the whole series of these remarkable observations, which are easily explained by the occurrence of embolie, but which, without the knowledge of this condition, would remain utterly unconnected, and would appear to be no more than accidental complications. I shall, in the first place, describe the case, and shall then make some observations regarding it:—

A young man, a carpenter, 25 years of age, was admitted, on the 24th of November 1859, into the medical clinique of the University of Breslau.

His health had been pretty good, except that, for some months previous to admission, he had often suffered from palpitations of the heart, and from pain and dyspnœa in going up stairs; since that time his breath had become habitually shorter than before. He had never suffered from acute articular rheumatism. Six weeks before admission, he passed blood with his urine, and suffered from pain in the region of the kidneys.

On the day before admission he cut his finger; and, after losing a good deal of blood, he suddenly fell down insensible. He was with great difficulty roused from this state of insensibility, and did not completely regain consciousness for two hours. From that time the right side of his body was found to be completely paralysed; he could not put out the tongue; he had lost entirely the faculty of speech, but retained his intelligence completely, and replied by signs to those who surrounded him. When he came to himself, the face was not red; the respiration was free, and presented nothing of a stertorous character. As he got no better during the night, he was brought to the hospital on the morning of the 24th of November, when he was found to be in the following state:—

The patient is quite conscious, but is totally deprived of the power of speech. It is seen at a glance that the thorax is shaken by each contraction of the heart, the impulse of which is very strong. Percussion elicits dulness from the third to the seventh rib, and from the right border of the sternum to beyond the left nipple. At the base of the heart a well-marked diastolic bruit is heard, which extends across the sternum to the right side of the chest, following the course of the aorta. Paralysis of motion is complete on the right side of the body, but sensation is entire. There is no headache; the pupils are normal; there is no dyspnœa; the spleen is enlarged, extending two finger-breadths below the left false ribs; above, its dulness is also considerably extended; it is somewhat painful on pressure. There is no fever; the pulse is 72, full and vibrating. The urine is scanty, of natural specific gravity; its colour dark yellow, verging upon brown; it contains much albumen and numerous tube casts, but no blood. The patient's bowels have not been moved since the accident. The electro-muscular contractility is normal in the paralysed parts; the temperature of the skin is natural. The treatment is expectant, as there does not appear to be any special indication to be fulfilled. He is allowed a moderate amount of food, according to his appetite.

During the following days he had no particular complaint, but the power of speech did not return. The mouth was pulled a little upwards, and to the left; he could not shut the right eye perfectly; the movements of the right side of the mouth were impeded; deglutition was somewhat difficult. A dose of castor oil was followed by an abundant evacuation. The carotids beat strongly, and were the seat of a blowing murmur.

On the 28th he complained of pain in the right arm. There was still much albumen in the urine.

On the 1st of December he complained of an excoriation over the sacrum.

On the 4th of December he was attacked with fever; the skin was warm (103°); the pulse 108, full; respiration oppressed, accelerated, 36 in a minute. He was agitated and restless; there was no cough, and examination of the chest elicited nothing to account for the fever or dyspnœa; the state of the heart was the same as on admission; there was great thirst; the tongue was white and moist; there was still pain in right arm. He was ordered infusion of digitalis, lemonade, and low diet. The urine was scanty and turbid, and its specific gravity had increased from 1015 to 1025: its reaction was alkaline; but, in order to determine its condition within the bladder, some was withdrawn with a catheter, and found to be acid. As the patient's countenance was flushed and excited, and as there had been a bleeding from the nose, eight leeches were applied behind the left mastoid process, but without producing any good effect. The liver was somewhat tender on pressure. There was a systolic bruit at the apex of the heart.

On the 7th of December a tympanitic sound was recognised below the left clavicle; and behind, on the left side, there was dulness over the upper half of the chest, with sub-crepitant râle, and bronchial respiration and bronchophony, best marked below the spine of the scapula; the right side of the chest was natural; pulse 120, still full; no change in the condition of the heart; respiration difficult; no cough nor expectoration; tongue and lips dry; nostrils dilated at each inspiration; there was no headache. He was bled to 360 grammes (about 12 ounces); and was ordered to take, every hour, a tablespoonful of infusion of digitalis, containing about half a grain of tartrate of antimony to the ounce.

After the bleeding, the patient felt much relieved; his pulse fell to 108; he perspired freely, the respiration became easier, and he had a little sleep. With the exception of several loose stools, he felt no inconvenience from the antimony. But on the following day this transitory amendment had disappeared: the pneumonia had not diminished; and in the two upper thirds of the left side of the chest, posteriorly, there was a dull sound on percussion, with crepitation, bronchial breathing, and bronchophony; the impulse of the heart was very strong, and the diastolic murmur at the base was most distinct. The patient had a feeling of great oppression; respirations 36.

On the 9th of December the antimonial solution was discontinued, in consequence of its having produced diarrhœa; he had fallen into a state of drowsiness; pulse 136, small; respirations 44; urine highly albuminous; tongue dry, face pale, no perspiration; the signs of pneumonia at the left apex were less distinct. As the patient was evidently becoming weaker, he was ordered to take, every hour, two grains of benzoic acid, with as much camphor, and to have soup three times a day.

Next day the pulse was 120, of fair strength; but, to our great surprise, we recognised a great diminution in the bruit at the origin of the aorta; the pneumonia was in course of resolution. He was ordered to resume the antimony in small doses, in combination with muriate of ammonia.

On the 11th and 12th of December there was less oppression; the pulse continued pretty strong, from 120 to 124; the pneumonia remained stationary, the bronchial respiration and some râles continuing in two-thirds of the left back.

On the 12th, the diastolic murmur at the origin of the aorta returned, but not so strong as it had been previously.

On the evening of the 12th he pronounced some words distinctly, which he had not been able to do since the occurrence of the paralysis.

On the morning of the 13th the pulse was 108, strong; the tongue dry; the countenance had an appearance of exhaustion; the respiration continued oppressed, but there was neither cough nor expectoration; the stools and urine were passed involuntarily. He sank gradually, and died at ten o'clock at night.

Post-mortem examination 13 hours after death. There were fibrinous clots in the longitudinal and in the basilar sinuses; the surface of the brain was anemic, and only here and there a few veins were gorged with blood. There was a considerable amount of subarachnoid fluid, as well as a good deal in the occipital fossæ. At the first glance, the left middle cerebral artery (*l'artère sylvienne*) was seen to be prominent, solid, appearing as if filled with an artificial injection. Externally it presented the characters of arteritis secondary to its obstruction. The walls, especially the external coat, were thickened, indurated, of a yellowish-grey colour, and the cellular tissue surrounding the artery participated in the inflammatory induration. The artery was completely obstructed, the obstruction involving both the horizontal and the posterior branches. The coagulation was general in the two branches, but the starting point in the horizontal branch was an adherent clot, decolorized and firm, about 5 to 6 millimetres (about one-fifth of an inch) in length, and about the same in thickness; the more diffused coagulation had joined this clot. In the posterior division, starting from its origin, was found an embolie similar to that in the other branch, but of a yellow colour, soft, puriform in the centre; from this there had also proceeded a more extended coagulation. It was everywhere very easy to distinguish the secondary coagulations from the primary embolic clots.

The middle cerebral artery, when cleared of clots, presented internally a healthy appearance; in particular, there was a complete absence of atheromatous degeneration. The external cellular coat, however, had double its natural thickness, owing to a very considerable increase of corpuscles of connective tissue, arranged in groups, and offering the appearance chiefly of nuclei undergoing division and multiplication. There was consequently a secondary plastic inflammation of the walls of the artery.

The posterior cerebral artery, as well as the other vessels proceeding from the circle of Willis, presented nothing unusual.

All around the affected artery the cerebral substance was softened, of a pulpy consistence, almost diffluent at places, of a pale yellow colour, but in some places of a duller colour, presenting almost a cheesy appearance; in the peripheral portions the softening was of a pale red colour, with dark points due to little capillary ecchymoses, but there was nowhere any apoplectic extravasation. The softening extended from the surface of the base of the brain through the greater part of the optic thalamus, and through the external and posterior part of the corpus striatum of the left side. The softened part of the brain was found, on microscopic examination, to consist chiefly of granular matter, with numerous spherical granular bodies; very few fibres were recognisable, and these were in a state of fatty metamorphosis; there were none of the elements of blood found. All the rest of the brain was normal; there were no clots in the jugular veins.

The pericardium contained between six and seven ounces of serous fluid; there was also a little fluid in the cavity of the left pleura. The lower lobe of the left lung was covered with recent false membrane. The upper lobe of the lung was in a state of grey hepatisation; the upper part of the lower lobe posteriorly was in a state of red hepatisation, while anteriorly, and inferiorly, the pulmonary tissue was much congested, but otherwise natural. The heart was of large size; its length was 14 centimetres (5½ inches); its breadth at the base was the same; its circumference at the base 22 centimetres (about 8½ inches). The left ventricle, in particular, was hypertrophied. On the right side the heart contained fibrinous clots, the valves were normal; the thickness of the right ventricle was 6 millimetres (nearly ¼ inch). The aortic orifice was completely incompetent; the valves were thickened, especially at their free borders, and retracted, on one of them was an ulceration about the fifth of an inch in length, to which was adherent a cylindrical decolorized clot, tolerably firm, presenting a torn appearance at its free extremity, and which had furnished the clots which obstructed the branches of the middle cerebral artery. Beside this old clot was a more recent one, softer, blackish, adherent to the middle semilunar valve, the surface of which was unequal and slightly ulcerated on its free margin. All around, and especially below the aortic valves in the upper part of the left ventricle, were small fibrinous false membranes, slightly adherent to the surface of the endocardium; some of them had a gelatinous appearance. The mitral valve was natural. The left ventricle was hypertrophied and dilated; its greatest thickness was about three-quarters of an inch.

The left surface of the diaphragm presented the character of diaphragmatic pleurisy, the surface being dull, highly injected, and covered with false membranes.

There were no adherent coagula in the renal, mesenteric, or cœliac arteries. The liver was much injected, otherwise natural. The spleen was very voluminous, being 7 inches long, 4½ broad, and upwards of an inch thick. The surface was scattered over with yellowish spots; a hæmorrhagic patch more than three quarters of an inch broad, of a yellow ochry colour, penetrated deeply into its substance; a similar patch, of the size of a walnut, was found on the free border; near one of these the splenic artery appeared indurated and much constricted, but there was no obstructing clot. The kidneys were enlarged; they were five inches long, about two and a half broad, and upwards of an inch thick; the surface was pale, lobulated, and granular; the cortical substance was pale; each kidney contained several old decolorized apoplectic clots, surrounded by a dark retracted border; in addition, the left kidney contained in one of its calices a little branching yellow calculus. The stomach and intestinal canal were natural.

This case presented a special interest with regard to its diagnosis. At the time of the admission of the patient there were under my care several examples of recent cerebral apoplexy, and nothing would have seemed more natural than to place the present case under the same category. Nevertheless, taking into consideration the age of the subject, twenty-five years, the sudden loss of consciousness out of which he recovered at the end of ten hours, without stertorous breathing, without the face being flushed, but, on the contrary, pale, with paralysis of speech, and of one side of the body already complete; keeping especially in view the aortic insufficiency, the enlargement of the spleen and the albuminuria, I did not hesitate to express the opinion that we had not to do with a cerebral hæmorrhage, but that very probably vegetations had formed upon the aortic semilunar valves ulcerated by endocarditis; that portions of these vegetations had been carried successively to the spleen and to the kidneys; that ultimately a portion had become impacted in one of the arteries of the brain, arising from the internal carotid; and that, as most commonly happens, this had taken place on the left side. Experience has shown that this embolie occurs most frequently in the middle cerebral artery. Nevertheless, I expressed the opinion that, taking into consideration the loss of speech, the posterior part of the brain might have suffered, and that consequently there might also be a clot in the posterior cerebral artery. The *post-mortem* examination showed that this was not the case, but that a clot had become impacted in the posterior branch of the middle cerebral artery. This diagnosis having been arrived at, we could not of course look for a hæmorrhagic extravasation; but for an arrest of nutrition, with molecular destruction of the fibres and of the cerebral substance, with that kind of softening which follows stoppage of the circulation, and which was actually found on the examination.

The pneumonia, a dangerous complication, was readily recognised. But how were we to explain the sudden disappearance of the diastolic bruit several days before death, except on the supposition of a recent clot of large size, which, on afterwards contracting, had re-established the insufficiency, which had been for the time diminished. This was, in fact, the opinion expressed at the bedside of the patient, and confirmed by the autopsy.

Although all these pathological conclusions were rational, and were based upon facts already observed, I confess that it was not without a certain emotion that I commenced the *post-mortem* examination; and I was so much the more glad to find what I had said during life confirmed, as this was one of the first cases involving a somewhat difficult diagnosis which had come under my care in my new position of clinical professor at Breslau.

It would be very interesting to bring together all the cases of embolie of one of the cerebral arteries, published in the various French, German, and English Journals, to submit them to a rigorous analysis, and thus to trace the natural history of this remarkable affection of the brain.—*Gazette Médicale de Paris.*

[As this case is valuable from embodying some important points of modern pathology, and diagnosis, we have laid it in detail before our readers. We feel bound, however, to accompany it by a few remarks.

In the first place, we do not see how the albuminuria is explained on the supposition of embolie of the renal arteries; for "old decolorised apoplectic clots" (*anciens caillots apoplectiques décolorés*) in the renal substance do not generally produce any symptoms. We would therefore presume that the albuminuria depended upon the "granular" condition of the kidneys, manifestly quite a different affection. Neither do we understand why, in the heading of the case, there is stated to have been mitral insufficiency, for it is expressly stated in the account of the *post-mortem* examination that the mitral valve was natural; the systolic murmur at the apex, heard on the 4th December, might possibly have depended upon relative incompetency produced by the dilatation of the ventricle, but far more probably, we think, upon the passage of the column of blood over the endocardium, roughened by the deposit of false membranes. In the second place, we have read, with great surprise, the account of the treatment adopted. The subject of the case was, it is true, suffering from pneumonia; but think how many contra indications there were against the adoption of depleting measures. The patient had been out of health for months; he had lost blood immediately before admission; he was suffering from an affection of the brain depending upon interrupted local nutrition; there was extensive disease of the heart and kidneys; the pneumonia was secondary, and was situated in the upper part of the lung (a circumstance generally indicative of an asthenic type of the disease); while the alkaline condition of the urine showed that the vital powers were already much impaired. Yet, under these circumstances, the patient was bled, and antimony and other lowering remedies were freely administered! We believe that, under any mode of treatment, the case described must have terminated in death; still, had the strength of the patient been husbanded, and had stimulants been freely administered, the fatal result might at least have been delayed.

We have been induced to make these observations in case any of our readers, influenced by Professor Lebert's justly acquired celebrity, should be tempted to imitate him in what we cannot but consider a most injudicious plan of treatment.—Ed. *Ed. Med. Journal.*]

FATAL DISEASE PRODUCED BY THE TRICHINA SPIRALIS; ARTIFICIAL PROPAGATION OF THE PARASITE.

Trichina spiralis, known formerly only in a capsulated state, was considered more as a zoological curiosity than as a subject of pathological interest. No symptoms were known to betray its presence; and it was, perhaps, more frequently discovered in the dissecting-room of the students than at the *post-*

mortems conducted by the pathologist. Since its discovery by Owen, numerous conjectures have been formed relative to the nature, origin, and propagation of this singular parasite. Herbst believed it to be identical with filaria, Meissner and Davaine regarded it as a larva of trichosoma, and Küchenmeister considered it to represent an undeveloped, juvenile stage of tricocephalus dispar. The latter idea seemed to be confirmed by some experiments of Leuckart, who found trichinæ in the muscles of an animal fed with tricocephali; these experiments could, however, not be considered as conclusive, as the examination of the muscles before the experiment was commenced had been neglected. Herbst was the first to institute feeding experiments with trichinatous muscles. He found trichinæ in the muscles of the animals experimented upon; but the connective links between the parasites introduced into the stomach and those found in the muscles being deficient, no perfect light was thrown on the subject by these observations. The first experiments of Virchow, instituted last summer, tended materially to supply these deficiencies. In the intestinal canal of an animal fed with trichinatous muscle, he found the villi crowded with psorospermia; and free in the intestinal mucus numerous thread-like worms of the form of trichinæ, of both sexes, the sexual utricle of the male filled with sperm-cells, that of the female densely stocked with ovules. Trichinæ were thus proved to be bisexual. Their non-identity with tricocephali was also placed beyond doubt. The numerous points still requiring elucidation were being reserved for further inquiry, when, in January of the present year, the following case was observed by Professor Zenker, of Dresden, which, in conjunction with the experiments to which it gave the impetus, and for which it supplied the material, not only served to bring about a final settlement of the zoological part of the question, but disclosed the startling and alarming pathological fact, that trichina spiralis, hitherto considered to be an innocent parasite, is in reality the most terrible and dangerous of its kind,—that it can actually kill a healthy adult in a few weeks, under the most distressing symptoms:—

On January 12, 1860, a robust maid-servant, 24 years of age, was admitted into the Dresden Hospital. She had been indisposed since Christmas, and confined to bed since New Year's-day; complaining of depression, lassitude, sleeplessness, loss of apetite, heat, and thirst. These symptoms persisted on her admission; there was considerable pyrexia; the abdomen painful and tympanitic; and although neither splenic tumour nor roseola were present, the case was put down as one of typhoid fever. A remarkable affection of the whole muscular system now rapidly supervened, consisting in extreme painfulness of the extremities, with contractions of knee and elbow-joints, and œdematous swelling, particularly of the legs. The pain was so severe that the patient was continually moaning. Pneumonic symptoms supervened, and death took place on the 27th inst., preceded for twenty-four hours by an apathetic condition. The *post-mortem* examination showed in the internal organs merely an atelectatic condition of the left lung, with numerous small lobular infiltrations, bronchitis and hyperæmia of the mucous lining of the ileum. The muscles, however, which showed a greyish-red colour and a slightly freckled appearance, were found, on microscopic examination, to harbour vast numbers of non-capsulated trichinæ. The parasites were living, some coiled in spirals, others with extended bodies; and all (as Professor Virchow was the first to show, in a fragment of muscle which was forwarded to him for examination) living within the sarcolemma of the primitive fibrils. They showed various stages of development; they were diffused over all the striated muscles of the body, with exception of the heart, and that in such vast numbers, that, under a small magnifying power, as many as twenty were in the field of vision simultaneously. The muscular substance was otherwise fragile, homogeneous, non-striated, and showed numerous transverse fissures. The intestinal mucus was found to be swarming with mature trichinæ of both sexes; and the remarkable fact was elicited, that female trichinæ are viviparous; the central portion of the bodies being observed to be full of well-developed embryos.

Inquiry being directed to the probable source of the trichinatous infection, it was ascertained that on December 21, four days before the patient was taken ill, two pigs and an ox had been slaughtered in the establishment of her master. Some smoked ham and sausage, prepared from the meat of one of the pigs, were fortunately obtained, and on examination proved to be full of trichinæ. The parasites had a shrunken appearance; otherwise unchanged: reassumed a normal appearance on addition of water, but showed no signs of vitality. It is particularly worthy of remark, that to the naked eye the ham appeared perfectly healthy. It is very likely that the deceased had partaken of some of the raw meat. The butcher of the establishment (butchers notoriously indulge in raw meat) had also been taken seriously ill a short time afterwards, and was confined to his bed for three weeks with severe muscular pains, his whole body being semi-paralytic, etc. This complaint was ascribed to rheumatism at the time, but Professor Zenker correctly surmises that an immigration of trichinæ, not sufficiently extensive to prove fatal, may have been the cause of the attack; and that capsulated trichinæ would very likely be discoverable in his muscle. Professor Virchow immediately commenced a series of feeding experiments with the pieces of human muscle forwarded to him by Professor Zenker.

The following is a brief statement of the results, as published in the last number of Virchow's Archiv. :—

Rabbits fed with trichinæ die in about a month under symptoms of general muscular paralysis.

The trichinæ, which, as long as they reside in muscle, have no perfect sexual organs, become perfectly developed in the ileum. They are found free in the duodenum about six hours after a piece of trichinatous muscle has been introduced into the stomach. In about a month they attain a length of four lines, and during that period not only mature eggs and sperm-cells, but numerous embryos, resembling small filariæ, are developed, which leave the maternal body through the anterior sexual orifice, are found in the mesenteric glands, and rapidly invade the whole muscular system, dwelling within the sarcolemma, and feeding upon the contractile substance of the muscular fibres. They are found in all the striated muscles of the body, with the exception of the heart (Zenker states that he found a few in the heart of a rabbit fed with trichinæ); liver, lungs, kidneys, etc., are free. In case the immigration is not sufficiently extensive to cause a fatal result, the trichinæ become enclosed in a capsule, which consists originally merely in a thickening of the sarcolemma, and this is the only condition in which they were formerly known. The trichina now shows the highest development it is able to attain within the muscle, into which it originally penetrated in an embryonic stage. It still retains its vitality, and quietly waits for an opportunity to find its way back into the intestinal canal, where, as Virchow's observations have shown, the two sexes attain the stage of puberty, and a wonderful productiveness, so pernicious to the individual who is unfortunate enough to harbour such terrible guests, is displayed. The same applies to the non-capsulated trichinæ. The flesh of the rabbit had to the naked eye a perfectly normal appearance. The trichinæ are not near as numerous in this case as they were on former occasions. The intestinal mucus contained mature trichinæ of both sexes.

Professor Zenker made a feeding experiment with a piece of the ham. No trichinæ were found in the rabbit a week after. These experiments will no doubt be repeated, as the time elapsed was far too short to enable a definite conclusion to be formed.—*Medical Times and Gazette*, May 1860.

ON THE ILLUMINATION OF THE CAVITIES OF THE BODY BY MEANS OF ELECTRICITY.

BY M. FONSSAGRIVES.

A long time ago, the author had conceived the idea that the electrical light might be advantageously substituted in diagnostic researches, or in operative manœuvres, for the ordinary methods of illumination, which are either insufficient in intensity, or defective by the colour of the light, or embarrassing by the impossibility of using them without interfering with the space required for instruments, and by the necessity, on account of the heat evolved, of keeping the light at a great distance from the surface to be illuminated. The whole problem consisted in discovering a source of light, with little or no calorific action, which might be condensed in tubes of small size and of diversified form, and which would be of sufficient whiteness not to alter materially the colour of the organic textures lightened up by means of it. By the assistance of M. Th. du Moncel and M. Ruhmkorff, this problem seems to have been solved in a satisfactory manner. M. du Moncel, having observed that the vacuum tubes of Geissler do not become heated under the influence of the electric light transmitted through them, and knowing, moreover, that this light is more brilliant in proportion as the tubes of communication between the terminal balls of the apparatus are of a smaller diameter, suggested that, in taking an apparatus of that kind, in which a long tube, almost capillary in size, should be bent upon itself, and convoluted in the manner of the electro-magnetic multipliers, we might obtain not only a kind of luminous cylinder, capable of being introduced into narrow cavities, but even a kind of electrical beacon, on certain points of which the light might be concentrated, without any risk either of overheating or of commotions of any kind. The first part of the problem was, therefore, solved. With regard to the colour of the light in the tubes, as this depends entirely on the nature of the gas on which the vacuum has been made, and as the colour is white with certain mixed gases, as Carburetted Hydrogen, Carbonic acid, Hydrochloric acid, etc., all that is required to meet this part of the problem is to prepare the tubes with suitable gases. M. Ruhmkorff, to whom the construction of these tubes was entrusted, and who has introduced several improvements in their formation, has obtained results which are quite satisfactory. He has found out a mixture of gas, which gives a suitable white light in the tubes; and experience has shown that the amount of light afforded by the apparatus is more than sufficient for the requirements of medicine and surgery.

Without for the present tracing absolutely the field of application of this new means of illumination, the following may nevertheless be pointed out:—1. As a means of diagnostic exploration, in the examination of accessible organic passages, for the purpose of recognising their normal or pathological condition. 2. As means of illumination to assist experimental action. It is easy to foresee the utility of this means in those operations which present, among their greatest difficulties, the impossibility of lightening up suitably the surfaces on which instruments are to act. In particular, the following will derive advantage from this new application,—1st, Staphyloraphy; 2d, Operations for vesico-vaginal fistula; 3d, Extirpation of naso-pharyngeal or uterine polypi; 4th, Excision of tonsils, etc. Certain dental operations, also, may be expected to be rendered more easy of execution by this proceeding. It may be questioned, also, whether the field of the retina might not be illuminated more easily and completely by the same means.—*Acad. des Sciences*, Jan. 1860.

TOXICOLOGY.

INFLUENCE OF FATTY BODIES ON THE SOLUBILITY OF ARSENIOUS ACID.

BY M. BLONDLOT.

The remarkable fact, to which the author calls the attention of toxicologists, is the property which fatty bodies possess of presenting an obstacle to the solubility of arsenious acid, either in plain water, or in water slightly acid, or alkaline. A large number of experiments have proved to him that the least contact of arsenious acid, in the concrete state, with a fatty body, is sufficient to reduce its solubility in these different menstrua to one-fifteenth or one-twentieth of what it would be, *cæteris paribus*, without the intervention of the fatty principle,—a fact which may easily be ascertained by testing the proportion of arsenic dissolved by means of starch and tincture of iodine. Since a mere trace of any fat whatever is sufficient to produce this effect, and since neither acids nor energetic bases oppose any obstacle to it, it is evident that there is not in this case any chemical combination between the arsenious acid and the fatty body; and that, therefore, the latter can only interfere mechanically by soaking the arsenious acid, so as to remove it from the action of the aqueous fluids, which would dissolve it. This fact, in itself so simple, is susceptible of numerous applications in toxicology. It explains, in the first place, how it has happened that, in medico-legal analyses, arsenic has sometimes been sought for in vain in the liquid portion of aliments which contained it, when they were more or less fatty, such as soup, milk, etc. It also gives the reason why arsenic, taken in the form of powder, becoming mixed in the stomach with fatty substances, which retard its solution, has occasionally remained a very long time without producing poisonous effects,—a circumstance which might, in certain cases, mislead the investigations of justice. In the same way we may account for a very significant fact related by Morgagni, that, in his time, it was not very uncommon to see jugglers swallow, with impunity, pinches of arsenic, because, he adds, they had taken the precaution of swallowing beforehand milk and fatty substances, which they brought up again by vomiting after the public had retired. Finally, these experiments show the benefits which may be derived, in this kind of poisoning, from the administration of fatty bodies, especially of milk, which not only have the advantage of acting as emollients, according to the general belief, but which are veritable antidotes, capable of retarding considerably the solution, and consequently the absorption, of the arsenious acid, which, as often happens, still remained in the concrete condition.—*Acad. des Sciences*, Jan. 1860.

Part Fourth.

MEDICAL NEWS.

GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

MINUTES OF THE GENERAL COMMITTEE ON EDUCATION.

Tuesday, *June* 19, 1860.

Dr Stokes in the Chair.

The first recommendation of the Educational Committee—viz., "That all Students pass an Examination in General Education before they commence their professional studies"—was adopted.

1. *Moved* by Dr Andrew Wood; and *seconded* by Mr Green:—"That the second recommendation be adopted," viz., "That, as far as may be practicable, testimonials of proficiency granted by the National Educational bodies, according to the following list, be accepted, with such additions as the Medical Council may from time to time think proper to make: A Degree in Arts of any University of the United Kingdom, or of the Colonies, or of such other Universities as may be specially recognised from time to time by the Medical Council; Oxford Responsions or Moderations; Cambridge Previous Examinations; Matriculation Examination of the University of London; Oxford Middle Class Examinations, Senior and Junior; Cambridge Middle Class Examinations, Senior and Junior; Durham Middle Class Senior Examination; Dublin University Entrance Examination; An Examination by any other University of the United Kingdom, equivalent to the Middle Class Examinations of Oxford and Cambridge."

Amendment *moved* by Dr Apjohn; *seconded* by Dr Corrigan:—(1.) "That in London, Dublin, Edinburgh, and Glasgow, Boards of Examiners be constituted, by which the qualifications in general education of Candidates for the Medical Profession shall be tested. (2.) That the Members of this Board be appointed by the respective Branch Councils; and that a selection of subjects be made by the Council, to which such examination shall be restricted. (3.) That persons possessed of the qualifications enumerated in the following list be relieved from the necessity of subjecting themselves to any further examination in Arts: A Degree in Arts of any University of the United Kingdom; Oxford Responsions and Moderations; Cambridge Previous Examinations; Matriculation Examination of the University of London; Oxford Middle Class Examinations, Senior and Junior; Cambridge Middle Class Examinations, Senior and Junior; Durham Middle Class Senior Examinations; Dublin University Entrance Examination; Queen's University Entrance Examination. (4.) That the Examining Boards appointed by the Branch Councils limit their questions to the following subjects:—(*a*) English Grammar and Composition; (*b*) The Gospel according to St John, in the original Greek, together with some one Greek and some one Latin Class Author, taken at the option of the Student from the following list: Virgil's Æneid, 1st and 2d Books; Sallust; Cæsar, De Bello Gallico; Homer's Iliad, Books 1 and 2; Xenophon's Anabasis, Book 1; Walker's Lucian, first twelve Dialogues; Arithmetic, including Decimals, as well as Vulgar Fractions and the Rule of Three; Euclid, 1st, 2d, and 6th Books; Algebra, as far as Simple Equations, involving one unknown quantity; Mechanics, as far as Elementary Statics and Hydrostatics. (5.) That a fee, not exceeding , be paid by each Student before he presents himself for examination; and that the fund thus created be applied by the Branch Councils to the payment of the Examiners."

The amendment was *negatived;* the original motion *carried.*

2. *Moved* by Dr Andrew Wood; *seconded* by Dr Storrar; and *agreed to*:—"That the Matriculation Examination of the Queen's University in Ireland be added to the list of the National Educational bodies included in No. 2 of the Recommendations on General Education and Examination."

3. *Moved* by Dr Andrew Wood; and *seconded* by Mr Green:—"That No. 3 of the Recommendations of the Report be adopted," viz., "That the Examination in General Education be eventually left entirely to the Examining Boards of National Educational Bodies recognised by the Medical Council."

Amendment *moved* by Dr Corrigan; and *seconded* by Mr Watt:—"That No. 3 be omitted."

The amendment was *negatived;* the original motion *carried.*

4. *Moved* by Dr Acland; *seconded* by Dr Storrar; and *agreed to*:—"That No. 4 be adopted," viz., "That Students who cannot produce any of the testimonials referred to in the Second Resolution, be required to pass an Examination in Arts, established by any of the bodies named in Schedule (A) of the Medical Act, and approved by the General Council; provided that such Examination shall be, in every case, conducted by a Special Board of Examiners in Arts."

5. *Moved* by Dr Storrar; *seconded* by Dr Acland; and *agreed to*:—"That No. 5 be adopted," viz., "That without professing to lay down any complete scheme of general education for persons intending to become members of the Medical Profession, the Committee recommend that the scheme of Examination in Arts of the Licensing Bodies be, as nearly as practicable, similar to that of any one of the National Educational Bodies above specified."

6. *Moved* by Dr Alexander Wood; *seconded* by Dr Storrar; and *agreed to*:—"That the following gentlemen be appointed a Sub-Committee to prepare a Scheme for the Registration of Students, and also for the Visitation of Examinations: Dr Alexander Wood, *convener*, Dr Bond, Dr Storrar, Dr Christison, Dr Smith, Dr Embleton, Mr Green, Mr Nussey, Mr Watt, Mr Teale."

Minutes of Meeting, Wednesday, June 20, 1860.

Mr Green in the Chair.

Dr Alexander Wood presented the following Report of the Sub-Committee appointed to prepare a Scheme for the Registration of Students, etc.

REPORT OF THE SUB-COMMITTEE ON THE REGISTRATION OF MEDICAL STUDENTS.

With the view of carrying out Recommendations 6, 7, and 8 of the Committee on Education, appointed by the General Council in 1859, which are to the following effect:—

(6.) That on and after October 1st, 1860, all Medical Students be required to be registered by one of the bodies named in Schedule (A) of the Medical Act.

(7.) That the lists of Students registered be closed within a week after the commencement of each Session.

(8.) That no Student beginning professional study after September 1861, be registered, who has not passed an Arts Examination, in conformity with Resolutions 2 or 4.

The Committee recommend that the Council be advised to enact the following Regulations:—

(1.) That the several bodies in Schedule (A) of the Medical Act, either jointly or severally, open a Register for Students commencing their studies in Medicine, in the form annexed.

(2.) That the said Register be opened on the first day of each Session or Term, and remain open for fifteen days; and that within seven days after its close, the Officer in charge be required to transmit a duly authenticated copy thereof to the Registrar of the Branch Council of that Division of the United Kingdom to which the body or bodies belong.

(3.) That the Registrar of the Branch Council lay the list before the Branch Council, in order that the Branch Council may take whatever steps may seem necessary to secure its accuracy; and that it thereafter be transmitted, with any remarks by the Branch Council thereon, to the Executive Committee.

(4.) That the Executive Committee shall arrange these returns, and publish annually an alphabetical list of the names contained in them.

(5.) That when a Student is prevented, by sickness or any other unavoidable cause, from registering within the prescribed time, he present, as soon as the case admits, a statement of the circumstances, with proper evidence, to the authorities of the University or body under whose charge the Register may be; and if the application be sustained, such statement of the whole circumstance shall, by the authorities of the said body, be laid before the Branch Council, who shall, if there be cause, transmit the name of such Student to the Executive Committee, to be inserted in the List.

(Signed) ALEXANDER WOOD, *Chairman.*

1. *Moved* by Dr Alexander Wood; *seconded* by Dr Storrar; and *agreed to*:—" That the Report be received."

2. *Moved* by Dr Corrigan; *seconded* by Dr Storrar; and *agreed to*:—" That the following be adopted, in lieu of the 6th Recommendation of the Report on Education of 1859," viz., " That after October 1st, 1861, all Medical Students be required to be registered."

3. *Moved* by Dr Storrar; *seconded* by Dr Andrew Wood:—" That the 7th Recommendation of the Report of 1859 be adopted."

Amendment *moved* by Dr A. Thomson; and *seconded* by Sir James Clark:—" That No. 7 stand as follows: 7. That the lists of Students registered be closed within fifteen days after the commencement of each Session or Term."

Amendment *carried.*

4. *Moved* by Mr Teale; *seconded* by Dr Storrar; and *agreed to*:—" That the 8th Recommendation of the Report of 1859 be adopted."

5. *Moved* by Dr Alexander Wood; *seconded* by Dr Storrar; and *agreed to*:—" That the 1st, 2d, 3d, and 4th Recommendations of the Report of the Sub-Committee be adopted."

6. *Moved* by Dr Alexander Wood; and *seconded* by Dr Storrar:—" That the 5th Recommendation of the Report of the Sub-Committee be adopted."

Amendment *moved* by Mr Syme; and *seconded* by Sir Charles Hastings:—" That in lieu of the 5th Recommendation the following be adopted: That the Licensing Bodies shall have power to admit exceptions as to the time of Registration, if satisfactory to them, and shall transmit lists of such exceptions to the Branch Council of the part of the United Kingdom in which such exemptions have been granted, with the grounds stated."

Amendment *carried.*

SCHEDULE.—REGISTER OF MEDICAL STUDENTS.

No.	Name.	Date of Birth.	Place of Birth.	Present Residence.	Date of Registration.	Place of Registration.	Registering Body.	When and by what Body the Examination in Arts was conducted, and its Date.
1	A. B. .	—	—	London . .	—	University College, London.	University of London.	Matriculation Examination of University of London; May, 1861.
2	C. D. .	—	—	Birmingham .	—	Birmingham General Hospital.	Royal College of Surgeons of England.	Oxford Middle Class Examination; Aug., 1861.

Minutes of Meeting, Thursday, June 21, 1860.

Sir James Clark, Bart., in the Chair.

The minutes of the two last sittings of the General Committee on Education were confirmed.

1. *Moved* by Dr Storrar; *seconded* by Dr Thomson; and *agreed to*:—" That the various Educational and Licensing Bodies be required to transmit to the Registrar of the General Council, Returns, embodying any alterations which they may from time to time introduce into their Courses of General Study and Examinations, which qualify for the Registration of Medical Students."

2. *Moved* by Dr Andrew Wood; *seconded* by Mr Watt; and *agreed to*:— " That the age of Twenty-one be the earliest age at which any Professional License shall be obtained."

3. *Moved* by Dr Andrew Wood; *seconded* by Mr Watt; and *agreed to*:— " That four years of Professional Study be required, after the Examination in General Education."

4. *Moved* by Dr Andrew Wood; and *seconded* by Mr Watt:—" That the four years of Professional Study shall he held to embrace four Winter Sessions of six months each, and three Summer Sessions of three months each."

Amendment *moved* by Dr Corrigan; *seconded* by Dr Apjohn:—" That four years of Professional Study be required, after the Examination in General Education; the fourth Professional year being understood to terminate at the end of the Summer Session of that year."

Amendment *negatived;* original Motion also *negatived.*

5. *Moved* by Dr Apjohn; and *seconded* by Dr Stokes:—" That in the case of persons presenting themselves for Examination at the termination of the fourth year from the date of the preliminary Examination, a year of Professional Study will not be considered as completed, unless it appears, on the Examination of a Student's Certificates, that he has been for such time in attendance upon two Winter Courses, or one Winter and two Summer Courses, or upon one Winter or Summer Course, in conjunction with attendance for six months on the practice of a recognised General Hospital, or has been occupied at a recognised Hospital or Dispensary for twelve months, in the study of Clinical Medicine."

Negatived.

6. *Moved* by Dr Andrew Wood; and *seconded* by Mr Teale:—" That the Professional Examination be divided into at least two distinct parts; that the first be not undergone until after the termination of the Second Winter Session; and the final Examination not until after the termination of the fourth Winter Session."

Amendment *moved* by Dr Acland; and *seconded* by Dr Storrar:—" For the words 'Second Winter Session,' substitute 'Two years of Study;' for the words 'Fourth Winter Session,' substitute 'Four years of Study.' "

Amendment *carried.*

Dr Alexander Wood laid on the table the Report of the Sub-Committee on the visitation of Examinations, the consideration of which it was agreed to defer.

REPORT OF THE SUB-COMMITTEE ON THE VISITATION OF EXAMINATIONS.

The Committee beg to remind the Council, that by Clause 18 of the Medical Act, it is provided, that

> " Any Member or Members of the General Council, or any person or persons deputed for this purpose by such Council, or by any Branch Council, may attend and be present at any such Examinations."

The Council will observe, that by this clause, the duty of Visitation of Examinations can be effected, either personally, by Members of the Council, or by deputy.

The Committee are unanimously of opinion, that the duty of attending and being present at the Examinations of the various Licensing Bodies would be more efficiently and satisfactorily accomplished by deputy than by the Members of Council.

The Committee would therefore suggest that, for the present year, the General Council, or, if time does not admit of it, the Executive Committee, should appoint one or more Inspectors of Examinations, whose duty it should be to attend one or more of the Examinations of the bodies enumerated in Schedule (A) of the Medical Act, and to report fully on the character and extent of each Examination; and that such Report should be transmitted within three days to the Registrar of the Branch Council of that part of the United Kingdom in which the Examination has been held.

The Committee do not propose, in the event of this recommendation being adopted, that it should in any way supersede the power vested in each Member of the Council by the Medical Act; but are of opinion, that when such duty is to be exercised by a Member of Council, he would find it more satisfactory to attend in company with the official Inspector.

The Committee are further of opinion, that, with the view of affording facilities to the Inspector of Examinations, the Registrar of each body in Schedule (A) of the Medical Act should be enjoined to furnish to the said Inspector the periods fixed for such Examinations; or, in case the body to which he belongs has no fixed periods for Examination, he shall be required (when practicable) to give one week's notice of such Examination to the Inspector.

The Committee are of opinion that some means should be taken to establish an understanding between the various Licensing Bodies, by which the names of all Candidates rejected by one body should be *confidentially* communicated to the others with the least possible delay.

In conclusion, and with the view of bringing out the mind of the Council fully on this important subject, the Committee now throw the suggestions of the Report into a series of propositions, which can be fully discussed.

1. The Council resolve that, as the Medical Act leaves to the Council the alternative of fulfilling the important duty of Visitation of the Examinations of the various Licensing Bodies, either personally or by deputy, it is their opinion that it would be more efficiently and satisfactorily accomplished by deputy than by the Members of the Council.
2. That the Council endeavour, for the present year at least, to try how far the work can be satisfactorily accomplished by an Inspector of Examinations.
3. That it be remitted to the Executive Committee to appoint a suitable person as Inspector for one year, and to pay him such salary, not exceeding   , as they may think right, and such reasonable travelling expenses as they may from time to time allow.
4. That the Inspector so appointed keep a regular Report of his proceedings from day to day; and visit once at least in each year, or more frequently if required to do so by any of the Branch Councils, at times not previously intimated to the body whose Examination he proposes to attend, the Examination of each Body in Schedule (A), and report on the proceedings of such Body to the Branch Council of that division of the United Kingdom in which the Examining Body is situated.
5. That such Reports be annually laid before the Council, and at all times be open to the inspection of any Member of the Council.
6. That the Council direct their Registrar to require, by authority of the Council, from each Examining Body, a statement of the times fixed for Examination; and to require from all bodies who have no fixed times for Examination, to give, if practicable, at least seven days before any Examination is to be held, a notification of the time and place, when and where any such Examination is to be held.
7. That in the event of a Candidate at any Examination being rejected, his name shall be communicated *confidentially* to the Registrar of every other Examining Body without delay.

(Signed) ALEXANDER WOOD, *Chairman.*
Confirmed—JOSEPH HENRY GREEN.

GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

Minutes of Meeting, Thursday, June 21, 1860.

ROYAL COLLEGE OF PHYSICIANS, LONDON.

Sir CHARLES HASTINGS took the Chair at three o'clock P.M. *Present*—Dr Burrows, Mr Green, Mr Nussey, Dr Acland, Dr Bond, Dr Embleton, Dr Storrar, Dr Alexander Wood, Dr Andrew Wood, Mr Watt, Mr Syme, Dr A. Thomson, Dr A. Smith, Dr Leet, Dr Apjohn, Dr Corrigan, Sir James Clark, Mr Lawrence, Mr Teale, Dr Christison, Dr Stokes—Dr Francis Hawkins, *Registrar*.

The minutes of the last meeting were read and confirmed.

1. There were brought before the Council several memorials, in regard to recent admissions by the Royal College of Surgeons of England.

Mr Green, the representative of that body, explained that no one had received the diploma of the Royal College of Surgeons of England without having been examined and found qualified in Anatomy, Physiology, and Surgery, and without having been in practice for some years before the passing of the Medical Act, and without having produced certificates of respectable character.

Mr Green having further stated, that the practice of examining Candidates who had not gone through a full curriculum of study ceased on the 1st of March, and would not be resumed, the Council did not think it necessary to move in the matter.

2. A memorial from some members of the Royal College of Surgeons of England, resident in the Isle of Man, relative to the examination of Dentists by that College, having been read,

Moved by Dr Apjohn; *seconded* by Dr Storrar; and *agreed to*:—"That this Council has no authority to interfere with the privileges, in relation to Dentistry, conferred upon the College of Surgeons of England by charter, in accordance with the 48th section of the Medical Act."

3. A memorial having been received from an Association of Foreign Graduates, praying for the registration of their foreign degrees,

Moved by Dr Storrar; *seconded* by Dr Alexander Wood; and *agreed to*:—"That, by the 11th section of Schedule (A) of the Medical Act, the Council have authority only to register such foreign qualifications as were possessed by persons practising, by virtue of them, as Physicians in the United Kingdom before the 1st October 1858, and who can satisfy the Council that such qualifications have been conferred after regular examination."

4. A memorial from the Royal College of Surgeons of Edinburgh, relative to licenses in Midwifery, having been read,

Moved by Dr Andrew Wood; and *seconded* by Mr Watt:—"That, as Midwifery forms a branch of the education and examination of every Physician and Surgeon, and is not mentioned in the body of the Medical Act, apart from the qualification of Physician and Surgeon, it is unnecessary and inexpedient that licenses in Midwifery should be specially registered."

Amendment, *moved* by Dr Alexander Wood; and *seconded* by Dr Apjohn:—"That the memorial of the Royal College of Surgeons of Edinburgh, in regard to Midwifery licenses, be referred to the Committee appointed to consider what amendments are required in the Medical Act."

Amendment *carried*.

5. Dr Alexander Wood brought up the first Report of the Committee on Special Claims for Registration.

FIRST REPORT OF SPECIAL REGISTRATION COMMITTEE.

The Committee have to report that there are five applications from persons having graduated at Homœopathic Colleges in America, viz.:—Henry Thomas, Thomas Smith (Homœopathic College of Pennsylvania); Samuel Eadon, James Coombs, John Marchant Davison (Homœopathic College of Cleveland, Ohio).

Of these, Thomas Smith does not profess to have been examined at the College named, and the Committee have no hesitation in recommending that his application be rejected.

In regard to the cases of Henry Thomas, Samuel Eadon, James Coombs, and John Marchant Davison, who have got their degrees after examination at the Colleges named, a considerable difficulty occurs.

It seems that charters are granted with very great facility by the Legislatures of some of the States of America; and it therefore becomes a very grave question for the Council to decide, how far they are prepared to recognise the bodies so chartered as foreign Universities or Colleges in the sense intended by the Medical Act.

Samuel Eadon's claim was rejected by a vote of the General Council, on the 6th August last; and he has applied for a reconsideration of his case.

Henry Thomas, who claims to be a Graduate of the Homœopathic College of Pennsylvania, has addressed to the Registrar, and to each member of the Branch Council for England, a letter in the following terms:—

"Sir,—I hereby give you notice that I am a Doctor of Medicine by diploma, dated the first day of March one thousand eight hundred and fifty-five, of a foreign College, to wit, the Homœopathic Medical College of Pennsylvania, in the United States of North America: That I have been practising in the United Kingdom of Great Britain and Ireland, to wit, at Chester, before the first day of October one thousand eight hundred and fifty-eight; to wit, from the year one thousand eight hundred and fifty-six, hitherto: That I have produced or forwarded by post to the Registrar of the Branch Council for England, my diploma as Doctor of Medicine, and other documents, and evidence of the qualification in respect of which I claim to be registered as hereinafter stated: That I have produced to the Council certificates of my having taken my degree of Doctor of Medicine after regular examination, and have in all respects complied with, and am ready and willing to comply with the provisions contained in 'The Medical Act,' 21 and 22 Vict., cap. 90. I now therefore claim to be registered under, and by virtue and in accordance with, the provisions of the said 'Medical Act;' and I demand that my name be placed upon 'The Medical Register': And I hereby further give you notice, that if this my demand be not complied with, or a satisfactory reason be not given for the non-compliance therewith, within fourteen days, such proceedings will be taken, either by mandamus or otherwise, against you, and the members of the Branch Council of England, either individually or collectively, or both individually and collectively, as I may be advised. (Signed) "HENRY THOMAS.

"Dated this 27th day of January 1860."

A claim has been presented by Thomas Airey, under section 11 of Schedule (A).

The Committee are of opinion that Thomas Airey has failed to establish his claim, and ought not to be registered.

ALEXANDER WOOD, *Chairman.*

Moved by Mr Syme; and *seconded* by Dr Alexander Wood:—"That the names of Samuel Eadon, James Coombs, John Marchant Davison, and Henry Thomas, be registered, in strict compliance with the Medical Act."

Amendment *moved* by Dr Corrigan; and *seconded* by Dr Apjohn:—"That the names of Samuel Eadon, James Coombs, John Marchant Davison, and Henry Thomas, be not registered."

The further consideration of this subject was adjourned.

The following letter was read from the President:—

"14, Saville Row, W., *June* 21, 1860.

"MY DEAR SIR,—I will thank you to express to the Medical Council, at their meeting this day, that, in pursuance of the notice which I have already given it is my wish to resign my office as President of the Council, before the conclusion of the present Session.

"Although circumstances compel me to take this step, I take it with great reluctance, having had so much experience of the kindness and courtesy shown me by every member of the Council since they first did me the honour of electing me to preside over their meetings.—I am, etc.,

"Dr Hawkins." "B. C. BRODIE.

Confirmed—B. C. BRODIE.

MINUTES OF THE GENERAL COMMITTEE ON EDUCATION.

Friday, June 22, 1860.

Mr GREEN in the Chair.

The minutes of the last sitting of the Committee were read and confirmed.

1. *Moved* by Dr Storrar; *seconded* by Dr Andrew Wood; and *agreed to*:—"That No. 2 in the Report of 1859, on Professional Examination, viz., 'That the first Professional Examination be conducted partly in writing, and partly *vivâ voce;* and that such parts of it as admit of it be made as practical and demonstrative as may be possible,' be adopted, with the omission of the words 'of it,' after 'parts.'"

2. *Moved* by Mr Teale; *seconded* by Dr Embleton; and *agreed to*:—"That in lieu of No. 3, in the Report of 1859, the following be adopted: 'That the second Examination be conducted partly in writing, partly *vivâ voce*, and practically as far as may be convenient and attainable.'"

3. *Moved* by Dr Andrew Wood; *seconded* by Dr Storrar; and *agreed to*:—"That No. 4 of the Report of 1859 be read thus: 'That the Professional Examinations be held by the several Licensing Bodies (except in special cases) at stated periods, to be publicly notified.'"

4. *Moved* by Dr Andrew Wood; *seconded* by Dr Corrigan; and *agreed to*:—"That in lieu of No. 5 of the Report of 1859, the following be adopted: 'That Returns from the Licensing Bodies under Schedule (A) be made annually on the 1st of January, to the General Medical Council, stating the number and names of the Candidates who have passed their respective final Examinations, and the number of those who have been rejected.'"

5. *Moved* by Mr Teale; and *seconded* by Dr Apjohn:—"That, in the opinion of the Medical Council, it is desirable that, after , no University of the United Kingdom shall confer any degree in Medicine, whether a Bachelorship or Doctorate, upon any Candidate who has not graduated in Arts."

Amendment *moved* by Mr Syme; and *seconded* by Dr A. Thomson:—"That the duty of the Medical Council, in regard to Professional Education, is limited by the Act to ascertaining that the prescribed Courses of Study and Examination are 'such as to secure the possession, by persons obtaining such qualifications, of the requisite knowledge and skill for the efficient practice of their profession.'"

The debate was adjourned to Saturday, at eleven o'clock.

Confirmed—JOSEPH HENRY GREEN.

GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

Minutes of Meeting, Friday, June 22, 1860.

ROYAL COLLEGE OF PHYSICIANS, LONDON.

Dr BURROWS took the Chair at two o'clock P.M. *Present*—Mr Green, Mr Nussey, Dr Acland, Dr Bond, Dr Embleton, Dr Storrar, Dr Alexander Wood, Dr Andrew Wood, Mr Watt, Mr Syme, Dr A. Thomson, Dr. A. Smith, Dr Leet, Dr Apjohn, Dr Corrigan, Sir James Clark, Sir Charles Hastings, Mr Lawrence, Mr Teale, Dr Christison, Dr Stokes—Dr Francis Hawkins, *Registrar*.

The minutes of the last meeting were read and confirmed.

1. The adjourned debate on the First Report of the Committee on Special Claims for Registration was resumed.

Mr Syme was permitted by the Council to withdraw his motion:—" That the names of Samuel Eadon, James Coombs, John Marchant Davison, and Henry Thomas be registered, in strict compliance with the Medical Act," and to substitute for it the following motion, *seconded* by Dr Storrar:—" That the opinion of the Attorney-General be taken on the claims of Henry Thomas to register his Degree obtained from the Homœopathic College of Pennsylvania; and of Samuel Eadon, James Coombs, and John Marchant Davison to register their Degrees obtained from the Homœopathic College of Cleveland, Ohio; and that it be delegated to the Executive Committee, after receiving the opinion of the Attorney-General, to take such steps as may seem to them expedient."

The amendment of Dr Corrigan was put and negatived, viz.—" That the names of Samuel Eadon, James Coombs, John Marchant Davison, and Henry Thomas, be not registered."

The motion substituted by Mr Syme was then put and carried.

2. *Moved* by Dr Alexander Wood; *seconded* by Dr Stokes; and *agreed to*:— " That, in accordance with the recommendations of the Report of the Committee on Special Claims for Registration, Thomas Smith and Thomas Airey be not registered."

Sir BENJAMIN BRODIE, Bart., *President*, then took the Chair.

3. Letters were read from Mr William Gwynn, stating that the University of Dublin had refused to admit him to the Degree of Doctor of Medicine and to that of Master in Surgery, on the ground that he had adopted a particular theory of Medicine, and requesting " that the Medical Council, in accordance with the Act 21 and 22 Vict., cap. 90, sect. xxiii., will represent the same to Her Majesty's most Honourable Privy Council."

Moved by Mr Syme; *seconded* by Dr Andrew Wood; and *agreed to*:—" That the Council resolve that they see no reason for taking any step in relation to the letters of Mr Gwynn."

4. A petition was read, which had been transmitted by the Registrar of the Branch Council for Scotland, from Mr J. B. Clarkson, of Melrose, for the reduction of a Registration Fee.

Moved by Dr Andrew Wood; *seconded* by Dr Alexander Wood; and *agreed to*:—" That the Council have no power to comply with Mr Clarkson's petition."

5. A memorial was read from the Gloucestershire Medical and Surgical Association, praying for " better securities for the conviction of illegal Practitioners."

Moved by Dr Alexander Wood; *seconded* by Sir Charles Hastings; and *agreed to*:—" That the memorial from the Gloucestershire Medical and Surgical Association be referred to the Committee appointed to consider what amendments are required in the Medical Act."

6. Information having been laid before the Council, from the Royal College of Physicians of Edinburgh, and also from the Faculty of Physicians and Surgeons of Glasgow, that the name of Mr John Valentine Laverick had been struck off their respective lists of Licentiates;

Moved by Dr Alexander Wood; *seconded* by Mr Watt; and *agreed to*:— " That, in conformity with Clause XXVIII. of the Medical Act, the name of John Valentine Laverick be erased from the Register, he having been deprived of the two qualifications in respect of which he has been registered, by the Royal College of Physicians of Edinburgh, and the Faculty of Physicians and Surgeons of Glasgow respectively."

7. *Moved* by Dr Christison; *seconded* by Dr Andrew Wood; and *agreed to*: —" That the attention of the Medical Council having been called to Regulations issued under authority of Her Majesty's Privy Council, on 6th December 1859, requiring that all Public Vaccinators shall have undergone in the art of Vaccination a special education, and a special examination, the particulars of which are minutely laid down in the Memorandum of the Privy Council—the Medical Council resolve that one purpose, and a main one, of the Medical Act, was to

ensure that the members of the Medical Profession shall be duly educated and examined in the various branches of the profession;—that the Council, with the co-operation of the various bodies which grant qualifications in Medicine, have assiduously laboured to discharge this function; and do not doubt that, among other results, the important object of the Privy Council will in consequence be fully attained;—that it will be a great discouragement to the Medical Council, and to the bodies placed by the Medical Act under their superintendence, if other public bodies issue, for limited branches of professional practice, regulations substantially constituting new and limited branches of the Medical Profession, independent of this Council;—and, therefore, that it be remitted to the Executive Committee to draw up a statement expressing the views of this Council, and to submit the same to the Lords of Her Majesty's Privy Council."

8. *Moved* by Dr Christison; *seconded* by Sir Charles Hastings; and *agreed to:* —"That it be remitted by the Council to the Executive Committee to take such steps as they may consider advisable, for promoting the Registration of Medical Officers in the Military and Naval Services."

9. A reference from the Royal College of Physicians of Edinburgh, in regard to the Ordinances of the Universities (Scotland) Commissioners for conferring Degrees in Medicine in the University of Edinburgh, having been read,

Moved by Dr Alexander Wood; *seconded* by Mr Lawrence:—"That the General Council of Medical Education and Registration having taken into consideration the Ordinances of the Scottish University Commissioners, for regulating the conferring of Medical Degrees in the University of Edinburgh, dated 6th August 1859, which were laid before them by Mr Syme on the 8th of August last, and also the further supplementary Ordinances of the 19th of March 1860, which have been circulated among the members of the Council, find: 1st, That having already declared that the higher Degrees in Medicine should be distinguished by corresponding Academic rank, obtained by a full, and as nearly as possible, equivalent Academic Education, they are compelled reluctantly to record their opinion that these Ordinances, if carried into effect, will tend to frustrate their efforts in this direction. 2d, That having also declared, 'That all Students should pass an Examination in General Education before they commence their professional studies,' the Council are of opinion that it is impossible for the generality of Students to acquire, before the age of seventeen years (which they must do, if they are to take their Medical Degree at twenty-one years of age), such a general education as shall enable them to prosecute their medical studies with success, and afterwards to take the position which University Graduates ought to take among the educated classes of the community. 3d, That, in the opinion of the General Council, the scheme proposed by the Commissioners, by which a Degree in Medicine and a Degree in Surgery are to be given after one Course of Study and one Examination, tends inevitably to establish a fictitious, not a real distinction between a Physician's and a Surgeon's Diploma, and is opposed to the spirit of the Medical Act."

Amendment *moved* by Mr Syme; *seconded* by Dr A. Thomson:—"That it is inexpedient for this Council to express any opinion at present, with respect to the terms upon which Degrees in Medicine are conferred by the University of Edinburgh."

Amendment negatived.

Dr Alexander Wood required that the names of the majority and minority should be entered on the minutes. *Majority*—Dr Burrows, Mr Green, Dr Acland, Dr Bond, Dr Embleton, Dr Andrew Wood, Dr Alexander Wood, Mr Watt, Dr Smith, Dr Apjohn, Dr Corrigan, Mr Teale. *Minority*—Mr Nussey, Dr Storrar, Mr Syme, Dr A. Thomson, Dr Leet, Sir Charles Hastings, Dr Christison.

The original motion was then put, and also negatived.

Dr Alexander Wood required that the names of the majority and minority should be entered on the minutes. *Majority*—Dr Burrows, Mr Nussey, Dr Acland, Dr Bond, Dr Storrar, Mr Syme, Dr A. Thomson, Dr Leet, Sir Charles

Hastings, Dr Christison. *Minority*—Mr Green, Dr Embleton, Dr Andrew Wood, Dr Alexander Wood, Mr Watt, Dr Smith, Dr Apjohn, Dr Corrigan, Mr Teale.

Dr Corrigan presented the following Report from the Committee appointed by the resolution of the General Medical Council of June 14, 1860, to consider defects which appear to interfere with the efficient working of the Medical Acts.

REPORT.

" The Committee consider that there will not be sufficient time within the present Session to draw up a Report that would contain the whole consideration of such an amended Bill as might embrace all the subjects which should be contained in it, and thus obviate the introduction of frequent or partially amended Bills. The Committee desire in this Report to do no more than draw attention to such points as appear to them, in the limited time they have had for consideration, to require to be amended, feeling assured that, in the interval that will occur between this and the next meeting of the Council, the several members of the Council will give the subject their attention and deliberate consideration; and the Committee also expect that there will be received within the same interval, from the profession generally, many valuable suggestions. The Committee trust that, with these aids, the General Council will be in a position, at no distant time, to prepare such a Medical Bill as may leave little room for alterations for many years to come; and the Committee recommend, with this object in view, that the Council should give the present Act, notwithstanding any acknowledged defects, a full and further trial, in order that they may become thoroughly acquainted with all such defects, and the best means of obviating them.

" The Committee, therefore, in this Report, confine themselves to observations on such sections as at present appear to them to require removal or amendment.

" Sect. X. of the Medical Act of 1858 is the first that appears to require amendment. In this section, as it at present stands, the Registrar of the General Council must be also Registrar of the Branch Council of England, and must be paid out of the General Fund such salary as the General Council may direct. The consequence of this arrangement is, that at any time the Branch Council may be left without a Registrar, and it might even be for a long period; for, in the event of a vacancy by death or otherwise, the Branch Council would not have power to appoint a Registrar. And, moreover, the salary of the Registrar of the Branch Council for England, under the present section, is wholly paid out of the General Fund, to which the Branch Funds contribute; while the salaries of the Registrars of the Branch Councils of Scotland and Ireland are wholly paid out of their respective Branch Funds. The Committee, therefore, propose that the section should stand thus:—' X. The General Council shall appoint a Registrar, who shall act as Secretary of the General Council, and who may also act as Treasurer, unless the Council shall appoint another person or other persons as Treasurer or Treasurers. The General Council shall also appoint so many clerks and servants as shall be necessary for the purposes of this Act; and every person so appointed shall be removable at the pleasure of the Council, and shall be paid such salary as the Council shall think fit.'

" The section as amended will therefore deal only with the appointments of Registrar and Secretary of the General Council. There is nothing in the section so amended to prevent the Branch Council from appointing to the office of Registrar of that Council the same person who may be the Registrar of the General Council.

" Sect. XI. should necessarily be altered to be in accordance with sect. X., and would relate to the appointment of Registrar, etc., by all the Branch Councils, and would then run thus:—' XI. The Branch Councils for *England*, *Scotland*, and *Ireland*, shall each respectively in like manner appoint a Registrar and other officers and clerks, who shall be paid such salaries as such Branch Councils respectively shall think fit, subject to the approval of the General Council, and be removable at the pleasure of the Council by which they were appointed; and the person appointed Registrar shall also act as Secretary to the

Branch Council, and may also act as Treasurer, unless the Council shall appoint some other person or persons as Treasurer or Treasurers.'

"Sect. XIII. To the alteration proposed in this section, the Committee request the particular consideration of the Council. As the section at present stands, all the monies received in Fees are payable to the respective Branch Councils; but in the Act there is no provision, and the Committee cannot see how any can be made, to determine to what Branch Councils the several Registration Fees shall be paid; and the consequence is, that it is possible so large a proportion of the Registration Fees might be paid into the fund of any one Branch Council as to leave the others without sufficient funds to carry out the purposes of the Act.

"Taking these considerations into account, and further considering that there must be only one Register for the United Kingdom, the Committee are of opinion that all the monies should be paid into a common fund, from which all the expenses of General and Branch Councils should be defrayed, subject, as provided for in Sect. X., to the approval and supervision of the General Council.

"The section thus amended would be to this effect:—'That all monies payable to the General and Branch Councils shall be payable into one common fund, from which all the expenses of the General and Branch Councils expenses shall be defrayed, subject to the supervision and approval of the General Council.'

"Sect. XIV. The proposed addition to this section is, 'That if any person registered shall notify to the Registrar that he has ceased to practise, and wishes to withdraw his name from the Register, the Registrar shall have power to erase his name.'

"Sect. XXV. It is proposed to erase the words commencing 'in the case of,' and ending with 'Ireland,' in the said section, to make it accord with Sect. X.

"Sect. XXVII. To make this section more clear, it is proposed to introduce words to this effect:—'And that he is not possessed of any qualification which would entitle him to be registered in accordance with the provisions of this Act,' to be introduced after the word 'Act,' in the said section.

"Sect. XXIX. To remove obscurity in this section, it is proposed to introduce the words 'whether before or after Registration,' after the words 'professional respect.'

"Sect. XL. It is proposed to substitute 'or' for 'and,' between the words 'Medicine *and* Surgery,' in two places of the section where the words 'Medicine *and* Surgery' are used; and to introduce the following words after 'or an Apothecary:' 'or who shall wilfully and falsely take or use the title of Physician, Doctor of Medicine, Bachelor of Medicine, or Licentiate in Medicine or Surgery, Surgeon, General Practitioner, or Apothecary.'

"This alteration is suggested, as it appears to the Committee that if a person registered under this Act, under one title, should assume in addition some title, qualification, or degree to which he is not entitled, the section would not apply to him, as the penalty, in the present words of the section, would be only recoverable against him for assuming a title implying that he is registered.

"Sect. XLI. It is proposed that the word 'shall' be substituted for 'may,' before the words 'in Scotland;' and that the words 'or by any other person,' after the word 'county,' be erased, in order to render it compulsory on the Public Prosecutor in Scotland to sue for penalties under the Act.

"Sect. XLII. This section is proposed to be amended by the addition of the following words to the end of section: 'who shall be authorized, under direction of the General Council, to hand over to the parties prosecuting the whole or any portion of such penalty towards defraying the expenses of such prosecution, as may seem fit to the General Council.'

"It would also be necessary to ascertain, by legal advice, whether any Local Acts intervene as to the working of the first part of the said section, as the Committee are informed that in London the Magistrates or Law Authorities have decided that such penalties are legally payable, under a Police Act, notwithstanding this section, into the Police Fund of London.

"Sect. XLVII. The portion of this section, commencing with the words 'Provided nevertheless,' etc., to the end of the section, relates merely to arrangements between the three Colleges of Physicians; and these three bodies have concurred in the propriety of the repeal of this portion of the section.

"There remain only some observations to be made with regard to the Licenses inserted in Schedule (A).

"There is in this Schedule provision for inserting the title, 'Fellow, or Member, or Licentiate in Midwifery of the Royal College of Surgeons of England;' and although no similar title is set forth as to the other bodies, it appears that the Executive Committee felt themselves constrained, under legal advice, to insert in the Register, 'Licentiate in Midwifery of King and Queen's College of Physicians in Ireland,' and 'Licentiate in Midwifery of the Royal College of Surgeons of Ireland.'

"This inequality between the Licensing Bodies appears to require to be removed, either by the omission altogether of the title of Licentiate in Midwifery from the Schedule, or by the insertion of similar privileges in regard to all Universities and Colleges which grant Degrees or Licenses in Medicine or Surgery. The latter appears to the Committee the preferable plan; for the omission altogether of Licentiates in Midwifery would lead to the renewed issuing of certificates purporting to be Licenses in Midwifery from self-constituted examining Authorities or Medical Officers of Midwifery Hospitals and Dispensaries, over whose proceedings the General Council or the Act could have no control; and, moreover, some of the Public Boards issuing regulations as to qualifications for Public Medical Appointments, require special certificates or qualifications in Midwifery.

"D. J. Corrigan, *Chairman.*

"June 22, 1860."

Confirmed—Joseph Henry Green.

Minutes of Meeting, Saturday, June 23, 1860.

Mr Green took the Chair at one o'clock, p.m. *Present*—Dr Burrows, Mr Nussey, Dr Acland, Dr Bond, Dr Embleton, Dr Storrar, Dr Alexander Wood, Dr Andrew Wood, Mr Watt, Mr Syme, Dr A. Thomson, Dr A. Smith, Dr Leet, Dr Apjohn, Dr Corrigan, Sir James Clark, Sir Charles Hastings, Mr Lawrence, Mr Teale, Dr Christison, Dr Stokes—Dr Francis Hawkins, *Registrar.*

The minutes of the last meeting were read and confirmed.

1. *Moved* by Dr Christison; *seconded* by Mr Nussey:—"That the letter from Sir Benjamin Collins Brodie, which announces his wish to resign his office as President of the Council, is received with sincere regret; that the Council tender their best thanks to him for the various and eminent services which he has rendered to the Medical Council; and that they cannot refrain from adding, that he will carry with him the esteem and respect of every member of the Council into all the other departments of his honourable career."

The motion was put and *carried by acclamation.*

2. *Moved* by Dr Corrigan; *seconded* by Sir Charles Hastings; and *agreed to*:—"That a copy of the foregoing Resolution be forwarded to Sir B. C. Brodie."

3. *Moved* by Dr Andrew Wood; *seconded* by Mr Teale; and *agreed to*:—"That the Resolution of the General Council of August 6th, 1859, No. 5, 'That the General Medical Council have observed that Amendments of the Medical Act have been introduced, at the instance of bodies represented in the Medical Council, into Bills brought into Parliament, without previous communication with the General Medical Council; and that the Council consider it desirable that, in future, such amendments should be first communicated to the President of the Council,' be amended, by adding 'to be by him communicated to the members of the Council.'"

Dr Alexander Wood brought up the Second Report of the Committee on Special Claims for Registration.

REPORT.

" The Committee had under their consideration the following cases :—

" Frederick Theophilus Webster.—This gentleman claims to be registered under Clause XLVI. of the Medical Act, as ' a Surgeon in the service of a Charitable Institution ;' he being Surgeon to several Benefit Societies. Mr Webster was appointed by the Guardians to the office of Medical Officer in the St Alban's Union, there being no other candidate, but the appointment was not confirmed by the Poor Law Board. Mr Webster supports his application by testimonials, which fully prove both character and ability; and a letter has been received from Messrs Farrer, Ouvry, and Farrer, the solicitors to the Council, in reference to it. Mr Webster's claim is opposed by Mr Hutchinson, who resides close by him, and who formerly supported the claim of a gentleman no better qualified. On the whole, the Committee are disposed to recommend that Mr Webster be registered."

" Antoine Rischanck claims Registration on a Surgical License from the Medical Faculty of Vienna. There was produced to the Committee a letter from the Dean of the College of Doctors of the Medical Faculty of Vienna, stating that Mr Rischanck ' absolved the Medical and Chirurgical course of Study, formed for the purpose of educating country Surgeons ; he studied for three years, and passed his Examination on the 28th January 1838, as Patron of Surgery and Midwifery (Surgeon and Accoucheur) ; he took his oath, and possesses a Diploma of the same date.' "

[Recommended for Registration.]

" Albert Günther, M.A., Dr Phil., Tubingen—Diploma in Medicine and Surgery from the Medical Council at Stuttgart."

[Recommended for Registration.]

" Theodore Günther, Emil Becher, Charles Milner—Obtained their Degrees of Doctors of Medicine at Tubingen, after regular Examination, and are recommended for Registration.

" Jonathan C. Sibley—Obtained his Degree as M.D. from the University of New York, after Examination."

[Recommended for Registration.]

" Frederic Hancorne Prytherch, James Godfrey—Obtained their Degrees after regular Examination, at Heidelberg."

[Recommended for Registration.]

" Michael Lambton Este, in addition to his titles already registered, wishes to be registered as M.D. of Erfurt—Diploma produced."

[Recommended to be registered.]

" Daniel B. Bascombe claims Registration, as M.D. of the University of Pennsylvania. The Dean of the Medical Faculty has failed to satisfy the Council that his Degree was obtained after regular Examination ; it is therefore recommended that the consideration of this case be delayed ; but that power be given to the Branch Council for England to register Dr Bascombe, should they be satisfied meanwhile that he was duly examined."

The following qualifications are recommended to be rejected :—

" William Hitchman, M.D., of the Protestant University of Bavaria—without Examination.

" Theodore Bloomenthal, M.D., Wurzburg, obtained after the passing of the Medical Act.

" William Ledger Erson, claims to be registered as a Licentiate of Midwifery of the Coombe Lying-in Hospital.

" ALEX. WOOD, *Chairman*."

4. *Moved*, separately in each case, by Dr Alexander Wood; *seconded* by Sir Charles Hastings; and *agreed to*:—" That Theophilus Webster, Antoine Rischanck, Albert Günther, Theodore Günther, Emil Becher, Charles Milner, Jonathan C. Sibley, Frederic Hancorne Prytherch, James Godfrey, and Michael Lambton Este, *be registered*."

5. *Moved* by Dr Alexander Wood; *seconded* by Sir Charles Hastings; and *agreed to*:—" That the recommendation of the Committee respecting Daniel B. Bascombe be adopted."

6. *Moved*, separately in each case, by Dr Alexander Wood; *seconded* by Sir Charles Hastings; and *agreed to*:—" That William Hitchman, Theodore Bloomenthal, and William Ledger Erson, *be not registered*."

Dr A. Smith presented the following

REPORT FROM THE FINANCE COMMITTEE, APPOINTED *June* 14, 1860.

" The Committee having taken into consideration the matters referred to them, respecting the Financial Affairs of the General Medical Council, report, that the Minutes of the General Council and the Executive Committee, and the Cash Accounts of the General Council, are kept in accordance with the recommendations of the Finance Committee appointed in 1859.

" With the view of bringing all the matters referred to the Committee under the notice of the Council in the most concise manner, they have been arranged as follows:—

1*st*. " Matters referred to the General Council by the Executive Committee and the Branch Council for England (see Resolution 7).

2*d*. " Resolutions suggested by the Committee (see Resolutions 8 and 9).

3*d*. " Recommendations of the Committee,—to be referred to the Executive Committee."

7. *Moved* by Dr Alexander Wood; *seconded* by Mr Watt; and *agreed to*:—" That in striking the Annual Per-Centage Rate in accordance with Sect. XIII. of the Medical Act, the words 'all monies received,' be understood to mean all monies received by the respective Branch Councils, from whatever sources derived."

8. *Moved* by Dr A. Smith; *seconded* by Dr Andrew Wood; and *agreed to*:—" That the Scale of Fees adopted on the 3d of August 1859, for attendance on the General Council, the Executive Committee, and the Branch Councils, and also for Travelling and Hotel Expenses, which was approved of by the Commissioners of Her Majesty's Treasury, be adhered to, until altered by the Council."

9. *Moved* by Dr Burrows; *seconded* by Dr Andrew Wood; and *agreed to*:—" That the non-resident members of the General Medical Council shall be paid Hotel Expenses for every Sunday while in London on the business of the Council."

10. *Moved* by Mr Lawrence; and *seconded* by Mr Nussey:—" That the Resolution proposed by Mr Syme, No. 3, in No. 21, of the Minutes of the General Council, be rescinded."

Negatived.

Dr Christison presented the following

REPORT ON THE MODE OF CONDUCTING THE BUSINESS OF THE COUNCIL.

" The Committee appointed on the 20th of June, to extract from the Minutes of Council such regulations as have been passed by the Council for conducting the business of the Council, and to report such alterations and new regulations as may appear to the Committee to be advisable,—have to report, that the Minutes contain the following

"*Resolutions passed by the General Council for Conducting Business.*

"1. The General Council shall meet each day at 2 P.M., and shall not sit after 6 P.M. (August 3, 1859, p. 4.)

"2. It is expedient that the proceedings of the Council be recorded in writing, in a book to be kept for that purpose. (August 10, 1859, p. 9.)

"3. That the minutes of each meeting of the Council, as well as all notices of motions, be printed, and transmitted to each member of the Council. (November 23, 1858, p. 3.)

"4. That the minutes of the several meetings of the Council shall contain simply such resolutions and amendments as have been proposed and adopted, or negatived, with the name of the proposer and seconder, and without any comment or observation of members annexed. (November 24, 1858, p. 1.)

"5. That a programme of the subjects which it is the intention of members of the Medical Council to bring forward, be forthwith prepared by the Registrar, be printed and distributed by him from day to day, as may be required, and that a Committee be appointed to aid the Registrar. (August 3, 1859, p. 4.)

"6. That any motion or motions lying over from the previous day take precedence of new matters, except by special permission of the Council. (August 6, 1859, p. 1.)

"7. That in all cases where a division has taken place, any member of the Council may require that the names of the majority and minority shall be entered on the minutes. (August 11, 1859, p. 2.)

"8. The Business Committee shall report as to the form in which new members shall take their place, both in the Branch Councils and in the General Council. (June 16, 1860, p. 2.)

"9. That whenever a Branch Council shall refer to the General Council the name of any person which it is deemed desirable to remove from the Register, the Registrar of the General Council shall be authorized to obtain the opinion of counsel on the facts and bearings of the case, before it is submitted to the General Council; and that such opinion of counsel shall accompany the statement of the case when it is brought before the General Council. (August 10, 1859, p. 9.)

"The Committee have considered whether it is desirable to alter or add to these Regulations. They do not propose that the Council should alter any of the Regulations already passed. They think it undesirable to attempt at present to construct a complete code of Regulations for conducting the business of the Council; that much may be safely left to evident convenience and well-known usage; and that it will be sufficient to provide, by additional Regulations, for those points in the conduct of business which have become the subject of serious difference of opinion among the members.

"These are two in number: *First*, the mode of dealing with motions and amendments; and *second*, the reception of protests.

"(1.) As to the mode of dealing with motions and amendments, the Committee find that three usages prevail in various public bodies, in the three divisions of the United Kingdom. One of these has been adopted, and extended into precise rules, by the London University Convocation. As these Rules have been found by the Convocation to answer well in practice, and appear to the Committee well fitted to bring out the sense of such meetings as those of the General Medical Council, they are now recommended for adoption, as follows:—

"*a.* No motion or amendment shall be withdrawn, after being put from the Chair, except by leave of the meeting.

"*b.* Any number of amendments may be moved.

"*c.* If there is but one amendment, the amendment shall be the first question put to the vote; and in any case where a motion and more than one amendment shall be before a meeting of the Council, the first question put to the vote shall be, 'That the original motion be amended.'

"*d.* In the case of there being but one amendment, if such amendment be lost, or, if in the case of there being several, it be carried that the original motion be not amended, the original motion shall then be put to the vote.

"*e.* If it be carried that the original motion be amended, the amendments shall be put to the vote in the order in which they shall have been moved.

"*f.* No discussion and no amendment shall be allowed after the first question has been put to the vote.

"This mode of procedure differs from the mode recommended from their experience by the Scotch members of Council, only in so far as it is the practice in the bodies with which they are connected to put the last amendment first. The Committee do not consider it material which of the two ways of putting the vote is adopted. But they think either of them better fitted to bring out the true sense of a meeting of such a body as the Council, than the third which has been brought under the Committee's notice; according to which, no amendment can be put to the vote at all, or even so much as minuted, unless the previous amendment, or the motion itself, be withdrawn.

"(2.) As to protests, the Committee consider it very undesirable that these should appear on the minutes, when they can be avoided. But on mature consideration, they are of opinion, that the right of a minority to protest, and to have their protest entered in the minutes, is a right which cannot be refused, without risk of substantial injustice to the minority, and eventual damage to this Council in its relations to the public.

"R. Christison, *Chairman.*"

11. *Moved* by Dr Christison; *seconded* by Dr A. Smith; and *agreed to*:—"That the Report of the Committee on the mode of conducting the business of the Council be received, and printed in the minutes."

Letters having been read which had been received from the Devonport Registration Association, relative to the Registration of Edwin Bishop,

12. *Moved* by Dr Storrar; *seconded* by Dr Christison; and *agreed to*:—"That the decision of the Branch Council for England on appeal in this case be not interfered with."

A letter having been read from Dr Scott, of Boulogne, relative to the Registration of J. M. Cookesley,

13. *Moved* by Dr Alexander Wood; *seconded* by Dr A. Smith; and *agreed to*:—"That Dr Scott's letter be remitted to the Branch Council for England."

Dr Andrew Wood presented the following

REPORT ON THE FORMS TO BE OBSERVED ON THE INTRODUCTION OF NEW MEMBERS OF THE MEDICAL COUNCIL.

"The Business Committee, to whom was committed the duty of preparing a Report as to the forms to be observed when new members take their place on the Branch Councils, or on the General Council, beg to report that in their opinion it is desirable that the following regulations be followed, viz.:—

"1. That it be the duty of the President, on receipt of intimation of the resignation or death of any member of the General Medical Council, to cause notice of the same to be sent to the Registrar of each of the Branch Councils.

"2. That the President, on receiving from any of the bodies entitled to send representatives to the Medical Council, or, in the case of members nominated by the Crown, an official notice of the election or nomination of a new member, or of new members, announce the same to the Registrar of each Branch Council.

"3. That the Registrar summon the person so elected or nominated to the first meeting of the Branch Council to be held after such announcement, and before the new member present himself at such meeting, the President's notification of his election or nomination be read, that he then be introduced to the meeting by some member of the Branch Council.

"4. That the same forms be observed in the case of persons who have, or have not taken their seat in the Branch Council, when they take their seat for the first time in the General Council.

(Signed) "ANDREW WOOD, *Chairman.*"

14. *Moved* by Dr Andrew Wood; *seconded* by Dr Embleton; and *agreed to:* —"That the Report of the Business Committee on the Forms to be observed on the introduction of new members into the Branch Councils and General Council be received and adopted."

15. *Moved* by Dr A. Smith; *seconded* by Dr Corrigan; and *agreed to:*— "That the Registrar be instructed to have the Standing Orders of the General Medical Council printed, and circulated among the members of the Council."

16. *Moved* by Dr Andrew Wood; *seconded* by Dr Corrigan; and *agreed to:* —"That the best thanks of this Council are eminently due, and are hereby offered, to the Royal College of Physicians of London, for their obliging and courteous accommodation during the present Session of the Medical Council."

17. *Moved* by Dr Andrew Wood; *seconded* by Mr Teale; and *agreed to:*—"That a gratuity of ten guineas be given to the servants of the Royal College of Physicians of London."

A letter having been read from Mr Nussey, intimating his resignation of the office of Treasurer of the General Medical Council,

18. *Moved* by Dr Storrar; *seconded* by Sir Charles Hastings; and *agreed to:* —"That the Council record their grateful acknowledgment of Mr Nussey's most valuable services."

19. *Moved* by Dr Andrew Wood; *seconded* by Dr Embleton; and *agreed to:* —"That Dr Burrows be elected as Treasurer, in room of Mr Nussey."

20. *Moved* by Dr Andrew Wood; *seconded* by Dr Embleton; and *agreed to:* —"That the Executive Committee consist of the President, Sir James Clark, Dr Burrows, Mr Nussey, Dr Acland."

21. *Moved* by Dr Andrew Wood; *seconded* by Mr Teale; and *agreed to:*— "That in the event of a vacancy, or vacancies, occurring during the recess in the Executive Committee, they be empowered to elect a successor or successors."

Mr Green having quitted the Chair,

22. *Moved* by Dr Burrows; *seconded* by Dr A. Smith; and *agreed to:*— "That Dr Stokes take the Chair."

23. *Moved* by Dr Acland; *seconded* by Dr Corrigan; and *agreed to unanimously:*—"That Mr Green be elected as President of the General Medical Council."

Mr Green then took the Chair, as President.

24. *Moved* by Dr Andrew Wood; *seconded* by Dr Embleton; and *agreed to:* —"That the Council now resolve itself into a Committee of the whole Council on Education."

The Council having resumed, Mr Teale brought up the following

REPORT OF THE GENERAL COMMITTEE ON EDUCATION.

"The Committee on Education, composed of the whole Council, have held several meetings during this Session of Council, the minutes of which are herewith presented.

"The Committee recommend the Council to defer for the present the consideration of the subject of the 'Visitation of Examinations,' regarding which the minutes contain a full report from a Sub-Committee.

"The resolutions agreed to by the Committee, which they recommend the General Council to adopt, are as follows:—

"I.—*General Education and Examination.*

"The Medical Council are of opinion that it is desirable,

"1. That all Students pass an examination in General Education before they commence their professional studies.

"2. That, as far as may be practicable, testimonials of proficiency granted by the National Educational Bodies, according to the following list, be accepted, with such additions as the Medical Council may from time to time think proper to make.

A Degree in Arts of any University of the United Kingdom, or of the Colonies, or of such other Universities as may be specially recognised from time to time by the Medical Council.
Oxford Responsions or Moderations.
Cambridge Previous Examinations.
Matriculation Examination of the University of London.
Oxford Middle Class Examinations, Senior and Junior.
Cambridge Middle Class Examinations, Senior and Junior.
Durham Middle Class Examinations, Senior and Junior.
Durham Examinations for Students in Arts in their second and first years.
Dublin University Entrance Examination.
Queen's University, Ireland, two years' Arts' course for the Diploma of Licentiate in Arts.
  Preliminary Examinations at the end of the A. B. course.
  Middle Class Examinations.
  Matriculation Examinations.
An Examination by any other University of the United Kingdom, equivalent to the Middle Class Examinations of Oxford and Cambridge.

"3. That the Examination on General Education be eventually left entirely to the Examining Boards of the National Educational Bodies recognised by the Medical Council.

"4. That Students who cannot produce any of the testimonials referred to in the Second Resolution, be required to pass an Examination in Arts, established by any of the bodies named in Schedule (A) of the Medical Act, and approved by the General Council; provided that such Examinations shall be, in every case, conducted by a special Board of Examiners in Arts.

"5. That without professing to lay down any complete scheme of General Education for persons intending to become members of the medical profession, the Committee recommend that the scheme of Examination in Arts of the Licensing Bodies be, as nearly as practicable, similar to that of any one of the National Educational Bodies above specified.

"6. That after October 1st, 1860, all Medical Students be required to be registered.

"7. That the lists of Students registered be closed within fifteen days after the commencement of each Session or Term.

"8. That no Student beginning Professional Study after September 1861 be registered, who has not passed an Arts Examination, in conformity with Resolutions 2 or 4.

"9. That the several bodies in Schedule (A) of the Medical Act, either jointly or severally, open a Register for Students commencing their Studies in Medicine, in the form annexed.

"10. That the said Register be opened on the first day of each Session or Term, and remain open for fifteen days; and that within seven days after its close, the officer in charge be required to transmit a duly authenticated copy thereof to the Registrar of the Branch Council of that division of the United Kingdom to which the body or bodies belong.

"11. That the Registrar of the Branch Council lay the list before the Branch Council, in order that the Branch Council may take whatever steps may seem necessary to secure its accuracy; and that it thereafter be transmitted, with any remarks by the Branch Council thereon, to the Executive Committee.

"12. That the Executive Committee shall arrange these returns, and publish annually an Alphabetical List of the names contained in them.

"13. That the Licensing Bodies shall have power to admit exceptions as to the

SCHEDULE.—REGISTER OF MEDICAL STUDENTS.

No.	Name.	Date of Birth.	Place of Birth.	Present Residence.	Date of Registration.	Place of Registration.	Registering Body.	When and by what Body the Examination in Arts was conducted, and its Date.
1.	A. B. .	—	—	London . .	—	University College, London.	University of London.	Matriculation Examination of University of London; May 1861.
2.	C. D. .	—	—	Birmingham .	—	Birmingham General Hospital.	Royal College of Surgeons of England.	Oxford Middle Class Examination; Aug. 1861.

time of Registration, if satisfactory to them, and shall transmit lists of such exceptions to the Branch Council of the part of the United Kingdom in which such exceptions have been granted, with the grounds stated.

"14. That the various Educational and Licensing Bodies be requested to transmit to the Registrar of the General Council, Returns, embodying any alterations which they may from time to time introduce into their Courses of General Study and Examinations, which qualify for the Registration of Medical Students."

"II.—*Professional Education.*

"15. That the age of Twenty-one be the earliest age at which any Professional License shall be obtained.

"16. That four years of Professional Study be required, after the Examination in General Education."

"III.—*Professional Examinations.*

"17. That the Professional Examinations be divided into at least two distinct parts; that the first be not undergone until after the termination of two years of Study; and the final Examination not until after the termination of four years of Study.

"18. That the first Professional Examination be conducted partly in writing and partly *vivâ voce;* and that such parts as admit of it be made as practical and demonstrative as may be possible.

"19. That the second Examination be conducted partly in writing, partly *vivâ voce*, and practically as far as may be convenient and attainable.

"20. That the Professional Examinations be held by the several Licensing Bodies (except in special cases) at stated periods, to be publicly notified.

"21. That Returns from the Licensing Bodies under Schedule (A) be made annually, on the 1st January, to the General Medical Council, stating the number and names of the Candidates who have passed their respective final Examinations, and the number of those who have been rejected."

"The General Medical Council, having in the course of last year expressed their opinion on the manner in which the General Education of Medical Students ought to be obtained, and stated the principles which appeared to them proper for the regulation of Professional Examinations, consider it undesirable, during the present Session, to enter upon any details of the requirements for the so-called higher Degrees and Qualifications.

"But, at the same time, they would record their opinion, that it is not desirable that any University of the United Kingdom should confer a Degree in Medicine, whether that of Bachelor or Doctor, upon Candidates who have not graduated in Arts, or passed all the Examinations required for the Bachelorship in Arts, or the Examinations equivalent to those required for a Degree in Arts."

25. *Moved* by Dr Corrigan; *seconded* by Mr Lawrence; and *agreed to:*—
"That the foregoing Report be adopted."

The Council then adjourned.

Confirmed—JOSEPH HENRY GREEN.

Minutes of Adjourned Meeting, *Saturday*, *June* 23, 1860.

Mr GREEN, *President*, took the Chair at half-past six o'clock P.M. *Present*—Dr Embleton, Dr Andrew Wood, Dr Alexander Wood, Mr Watt, Dr A. Smith, Dr Apjohn, Dr Corrigan, Mr Lawrence, Mr Teale.

The minutes of the last meeting were read and confirmed.

STANDING ORDERS AND REGULATIONS OF THE GENERAL MEDICAL COUNCIL.

I.—*Mode of Summoning the General Council.*

That the President, or any eight members of the General Council, may summon a meeting of the General Council at any time, by letter addressed to each member.

II.—*Forms on the Introduction of New Members of the Council.*

That it be the duty of the President, on receipt of intimation of the resignation or death of any member of the General Medical Council, to cause notice of the same to be sent to the Registrar of each of the Branch Councils.

That the President, on receiving from any of the bodies entitled to send representatives to the Medical Council, or, in the case of members nominated by the Crown, an official notice of the election or nomination of a new member, or of new members, announce the same to the Registrar of each Branch Council.

That the Registrar summon the person so elected or nominated to the first meeting of the Branch Council to be held after such announcement, and before the new member present himself at such meeting, the President's notification of his election or nomination be read, that he then be introduced to the meeting by some member of the Branch Council.

That the same forms be observed in the case of persons who have, or have not taken their seat in the Branch Council, when they take their seat for the first time in the General Council.

III.—*Order of Business.*

That the Council shall meet each day at two o'clock P.M., and shall not sit after six P.M.

That a programme of the subjects which it is the intention of members of the Medical Council to bring forward be forthwith prepared by the Registrar, to be printed and distributed to the members of the Council, and that such a programme be issued by the Registrar from day to day, as may be required; and that a Committee be appointed to aid the Registrar.

That any motion or motions lying over from the previous day take precedence of new matter, except by special permission of the Council.

That in all cases where a division has taken place, any member of the Council may require that the names of the majority and minority shall be entered on the minutes.

IV.—*Minutes of the Council.*

That the minutes of the several meetings of the Council shall contain simply such resolutions and amendments as have been proposed and adopted or negatived, with the name of the proposer and seconder, and without any comment or observation of members annexed.

That it is expedient that the proceedings of the Council be recorded in writing, in a book to be kept for that purpose.

That the minutes of each meeting of the Council, as well as all notices of motions, be printed, and transmitted to each member of the Council.

That the minutes of the Branch Councils and Executive Committee be printed; and that copies of them, marked *Confidential*, be sent to every member of the General Council.

That the minutes of the several meetings of the Council, from its commencement, as well as of Committees generally, be printed in uniform 8vo size; and that two copies be transmitted to each member of the Council, as well as to the several Registrars.

V.—*Executive Committee.*

That in the event of a vacancy, or vacancies, occurring during the recess in the Executive Committee, they be empowered to elect a successor or successors.

VI.—*Register.*

That the Register be made out in strict conformity with Schedule (D) of the Medical Act; and shall set forth the name in the first column; the residence in the second; the qualification in the third; and that the fourth be left blank.

That the words "or any qualification," in Clause XXX., line 2, mean any of the "qualifications" mentioned in Schedule (A), and none other.

That where any person entitled to be registered under the Medical Act applies to the Registrar of any of the Branch Councils for that purpose, such Registrar shall forthwith enter in a Local Register, in the form set forth in Schedule (D) to the Act, or to the like effect, to be kept by him for that purpose, the name and place of residence, and the qualification, or several qualifications, in respect of which the person is so entitled, and shall affix to such entry in the Register the date at which it was made.

That the Registrar of each Branch Council shall, within two clear days (Sundays excepted) after he has received notice of any alteration in the addresses or qualifications of persons registered under the Act, or legal evidence of the death of any registered Practitioner, cause such changes to be made in the Register, or the name of such registered Practitioner who has died to be erased from the Register.

That the Registrars of the Branch Councils for Scotland and Ireland shall keep an Alphabetical List of those registered, and shall, on entering a name in the Local Register, enter it forthwith also in its own place in the Alphabetical List.

That, as provided by the Act (Sect. XXV.), in the case of the Registrar for Scotland or Ireland, he shall, with all convenient speed, send to the Registrar of the General Council, certified under his hand, a copy of all the entries or changes so made in the Local Register.

That the General Registrar shall forthwith cause such entries in the Branch Registers to be made in a List kept by him.

That the General Registrar shall also keep, as directed by the Act, the General Register in Alphabetical Order, and shall, on receiving any additional name, forthwith enter it in such General Register.

That each page of these Registers and Lists shall be verified by the signature of the Registrar.

That during the first week of each month, the Registrars for Scotland, England, and Ireland, be instructed to publish, from time to time, as the Branch Councils may direct, the names, addresses, and qualifications entered in their Local Register during the preceding month.

That whenever a Branch Council shall refer to the General Council the name of any person which it is deemed desirable to remove from the Register, the Registrar of the General Council shall be authorized to obtain the opinion of counsel on the facts and bearings of the case, before it is submitted to the General Council; and that such opinion of counsel shall accompany the statement of the case when it is brought before the General Council.

VII.—*Fees.*

That the Fee to be paid by all those qualified before the 1st of January 1859 be Two Pounds sterling.

That the Fee for Registration of persons qualified after the 1st of January 1859 be Five Pounds sterling.

That the Registration Fee for those in practice before 1815 be Two Pounds sterling.

That the Fee for inserting additional qualifications be Five Shillings sterling.

That the Scale of Fees adopted on the 3d of August 1859 for attendance on the General Council, the Executive Committee, and the Branch Councils, and also for Travelling and Hotel Expenses, which was approved of by the Commissioners of Her Majesty's Treasury, be adhered to, until altered by the Council.

VIII.—*Treasurer's Returns.*

That the 5th of January in each year be the day on or before which the Treasurers of Branch Councils shall make their Returns to the General Council; and that as soon thereafter as may be, the computation of the per-centage and amount of contributions of the Branch Councils shall be made, under Section XIII. (lines 11 to 14 inclusive), and also that the accounts of the General and Branch Councils shall be examined by the Executive Committee previously to their being laid before Parliament in the month of March, under Section XLIV. of the Act.

That in striking the annual per-centage rate, in accordance with Sect. XIII. of the Medical Act, the words "all monies received," be understood to mean all monies received by the respective Branch Councils, from whatever sources derived.

IX.—*Penalties.*

That it shall be lawful for the Treasurer of the General Council to contribute, under the direction of the Branch Councils, any portion, or the whole, of any money penalty, which may accrue to the Council from a successful prosecution under this Act, towards defraying the expenses of such prosecution.

SCOTTISH UNIVERSITIES COMMISSION.

The following important ordinance has been issued by the Commissioners, containing regulations for the General Council, the University Court, and the election of Chancellor and Assessors:—

At Edinburgh, the Second Day of July Eighteen hundred and Sixty Years.

Whereas, by an Act passed in the Twenty-first and Twenty-second Years of the Reign of Her present Majesty, Chapter Eighty-three, intituled "An Act to make Provision for the better Government and Discipline of the Universities of *Scotland*, and improving and regulating the Course of Study therein; and for the Union of the Two Universities and Colleges of *Aberdeen*," the Commissioners under the said Act are empowered, subject to the Provisions of the Act, to regulate by Ordinance the Powers, Jurisdictions, and Privileges of Chancellors, Rectors, Assessors, Professors, and all other Members or Office-Bearers in the several Universities of *Scotland*, as also of the Senatus Academicus, the General Council, and the University Court, and their Meetings; and, further, to make Regulations as to Time, Place, and Manner of presenting and electing all University Officers; the Commissioners statute and ordain, with reference to each of the said Universities, as follows:—

I. At the Meetings of the General Council, in the Absence of the Chancellor, Rector, and Principal, the Professor who has been longest in Office, as Professor in the University, of those present shall preside: Provided that in the University of *St Andrew's* the Junior Principal, if present, shall, in the Absence of the Chancellor, Rector, and Senior Principal, preside in Preference to the Senior Professor; and in every Case the President of the Meeting shall have a deliberative and also a casting Vote.

II. It shall not be in the Power of the General Council to adjourn its Meetings from either of the stated annual Days of Meeting to a future Day; but it shall be in the Power of any Meeting to suspend its Proceedings from One Hour to a later Hour of the same Day.

III. It shall be in the Power of the General Council to appoint a Committee or Committees at One Meeting to arrange or prepare Business for a future Meeting; but it shall not be in the Power of the General Council to delegate any of its Functions to a Committee, or to act by means of a Committee.

IV. In the Absence of the Rector at a Meeting of the University Court of any

University, the Member present, who is first mentioned in the Enumeration of its Members in the said Act, shall preside, with a deliberative Vote only; and, in the Event of an Equality of Votes upon any Question at such Meeting, the Consideration of the Question before the University Court shall be adjourned to a Day, of which due Notice shall be given to the Rector; and on that Day the Consideration of the Question so adjourned shall be resumed, and, if the Rector does not then attend, the Member presiding at such subsequent Meeting shall have both a deliberative and a casting Vote on that Question.

V. On the Occurrence of a Vacancy in the Office of Chancellor, the Election of his Successor shall take Place at the first ordinary Meeting of the General Council, which shall take Place after the Lapse of Two Months from the Occurrence of the Vacancy.

VI. Whensoever the statutory Term of Office of the Assessor in the University Court for the General Council is to expire within Ten Days next after an ordinary half-yearly Meeting of the General Council, it shall be lawful for the General Council at the said half-yearly Meeting to proceed to the Election of an Assessor, who shall enter upon his Office at the Expiration of the said statutory Term of Office; and, in the Event of a Vacancy occurring from any Cause at any other Period, the General Council shall proceed to the Election of an Assessor at the next ordinary half-yearly Meeting.

VII. Provided always, that at any Meeting of the General Council, at which an Election of Chancellor or Assessor shall fall to take Place, the General Council shall proceed to such Election before entering on any other Business.

VIII. The Appointment of every Assessor to the University Court shall be made in Writing, and the written Appointment shall be forthwith transmitted to the University Court; and no Assessor shall be entitled to act as a Member of the University Court, until his written Appointment shall have been so transmitted.

IX. In the Election of Chancellor or of Assessor by the General Council, where more than One Person is nominated for the same Office, the President of the Meeting shall, by Means of a Show of Hands, ascertain and declare which of the Persons nominated has a Majority of Votes at the Meeting, and, if no Poll be demanded by the Proposer or Seconder of any Candidate, the President shall declare such Person to be duly elected; but, in the Event of a Poll being demanded by the Proposer or Seconder of a Candidate, a Poll of *all the Members of the General Council* shall be taken in the manner hereinafter provided, that is to say, the Registrar shall, on the next Day but One after the Day of Meeting, issue, through the Post, to each Member resident in the United Kingdom, to his Address as appearing in the Register, a voting Letter in the Form of Schedule (A.) hereunto annexed, with all the Blanks filled up, except the Name of the Person for whom the Member votes and the Signature of the Member; and such Letter shall be accompanied by a Letter of Intimation from the Registrar in the Form of Schedule (B.) hereunto annexed, and each Member, upon Receipt of his voting Letter, if he desires to vote in the Election, shall insert the Name of the Candidate for whom he votes, and affix his Subscription, and return the voting Letter to the Registrar in such Time, that the Registrar shall receive the same within Twenty-one Days after the said Day of Meeting; and, on the Expiration of the said Twenty-one Days, the Registrar shall, in the Presence of the Proposer or Seconder of each Candidate, or of some Person to be named by them for the Purpose, sum up the Votes so returned; and the Candidate, for whom the largest number of Votes shall be returned within the Time aforesaid, shall be declared to be duly elected as from the Day of Meeting, and an Intimation to that Effect, under the Hands of the President of the Meeting and the Registrar, shall be forthwith published in the *Edinburgh Gazette*, and a Copy thereof fixed in some patent Place in the University; and, in Case of an Equality of Votes for Two or more Persons, the President of the Meeting shall have a casting Vote: Provided always, that it shall be lawful for the Registrar to deliver his voting Paper, with the Blanks duly filled up as aforesaid, to any Member of the General Council personally, or to send it through the Post to any Member to a different Address from that appearing in the Register, on an Application by such Member to that Effect being lodged with the Registrar not later than the Day immediately following the Day of Meeting; but the Registrar shall not in any Case deliver the voting Paper of any Member to another Member, or to any other Person, but shall either send it through the Post, or deliver it personally to each Member; and no Vote shall be reckoned in the Election, which is not returned under the Signature of a Member to the Registrar in a voting Letter issued as aforesaid.

In Witness whereof, these Presents are sealed with the Seal of the Commission.

JOHN INGLIS, *Chairman*.

SCHEDULE (A.)

UNIVERSITY of [*Name of University*].

VOTING LETTER.

No. [*Number of Member, as in the Register*].

I [*Name of Member in full, with his Designation and Residence, to be filled in by the Registrar*] hereby record my vote in favour of * ____________ for the Office of [*Chancellor or Assessor, as the Case may be*].

† ____________

(*Date*) ____________

* Here the Voter will fill in the Name of the Candidate for whom he votes.
† Signature of Voter.

SCHEDULE (B.)

UNIVERSITY of [*Name of University*].

Election to the Office of [*Chancellor or Assessor, as the Case may be*].

Persons Nominated.	Proposed by	Seconded by
A. B., . . .	[(*Name of Proposer.*)	(*Name of Seconder.*)
C. D., . . .	*Do.*	*Do.*
E. F., . . .	*Do.*	*Do.*

SIR,

I have to intimate that the above mentioned Persons have been nominated for the Office of [*Chancellor or Assessor, as the Case may be*], and I have to request that, if you desire to vote in the Election, you will insert in the Blank of the accompanying voting Letter the Name of the Person for whom you vote, and, after signing the Letter, will transmit it to me at the University, so as to reach me on or before [*Day on or before which Votes must be returned*].

I am, etc.,

____________ *Registrar*.

(*Date*) ____________

—*Edinburgh Gazette*, July 6, 1860.

The Commission have also issued an ordinance relative to the retirement of aged and infirm Principals and Professors. The Commissioners statute and ordain: "That any Principal or Professor desiring to retire from his office on a retiring allowance, on the ground of age or infirmity, shall apply by petition to the University Court, stating the grounds on which his application is rested; and if the University Court, after due inquiry, shall be satisfied that the petitioner is, by reason of age or infirmity, permanently incapable to discharge the duties of his office, they shall report the same to Her Majesty in Council, together with a statement of their opinion that the petitioner ought to be permitted to retire; and, in the event of the opinion of the University Court receiving the approval of Her Majesty in Council, the petitioner shall be entitled to retire from his office, and to receive a retiring allowance on the same scale and conditions as may for the time be applicable to the case of a Principal or Professor retiring under Section XII. 5 of the said Act."

THE ORDINANCES OF THE UNIVERSITIES COMMISSIONERS FOR MEDICAL DEGREES.

On the 2d of July, a meeting of the Universities Commissioners was held in the Hopetoun Rooms, in terms of a remit from Her Majesty in Council, to hear counsel in support of the petitions presented to the Privy Council against the ordinances of the Commissioners, of August 1859 and March 1860, relating to medical degrees. The Commissioners present were—The Lord Justice-Clerk (Chairman), the Lord Justice-General, Lord Ardmillan, Sir William Gibson-Craig, and Alexander Hastie, Esq.

The counsel present were—The Solicitor-General and Mr Alexander Robertson, for the Royal College of Physicians of Edinburgh; Mr George Young and Mr Dove Wilson, for the Royal College of Surgeons of Edinburgh; Mr Adam Gifford, for the Faculty of Physicians and Surgeons of Glasgow; and Mr Robert Lee, for the Royal College of Surgeons of England,—all of which bodies had petitioned against the ordinances. Mr Macfarlane and Mr Millar appeared as counsel for the Senatus Academicus of the University of Edinburgh.

The hearing concluded about half-past five o'clock, having occupied upwards of five hours. The Commissioners, in terms of the remit to them, will report to Her Majesty in Council on the subject.

HOSPITAL FOR SICK CHILDREN AT LISBON.

[We give the following from the *Gazeta Medica de Lisboa*, a few of the numbers of which have reached us. The details are the more interesting, that, as our readers are aware, an effort is now earnestly making for the establishment of an Hospital for Sick Children in Edinburgh; and already with such proofs of real efficiency, as well as of warm confidence on the part of the poor, that the active and persistent support of the public appears alone wanting to give assurance, not only for its continued, but for its extended beneficent action. It must, besides, be always a gratification to us to aid in the promulgation of the fame of an act of signal benevolence, when, as in this instance, we must regard it as the more graceful that the rank of the donor has placed her above even the aspect of common suffering; and the more generous, that she relinquishes a portion of her wealth during her lifetime, in order to dispense it while she can still witness the results of its kindly influence, and while the possession of what is manifestly with her an elevated spirit of charity enables her to render it a living enjoyment. Similar examples are not unknown on the Continent, of which a striking instance, also in favour of a Sick Children's Hospital, occurs to us on the part of Count Demidoff, in Russia; but they are unfortunately rarer here, where liberality so extensive is usually posthumous. There are good hopes, however, that, in one shape or another, a timely benevolence, ample enough to be effectual and enduring, will soon reach so flagrant a source of suffering and mortality as that which now lays waste the young of the families of our poor.]

HOSPITAL OF ST VINCENT DE PAUL.

On the 21st of April took place the opening of this new hospital, founded and to be maintained at the cost of Her Excellency the Duchess de Palmella.

Many persons of the highest distinction assembled to witness the ceremony. The edifice, though not originally constructed for the purpose, presents, nevertheless, in the conveniency of its adaptation, advantageous conditions for the efficient fulfilment of the objects for which it is destined. The institution occupies the former palace of the Nuncio, in the street of St Miguel, a spacious locality, situated on a slight eminence towards the south, and freely opened to the air and sun.

The edifice consists of a main building, the principal floor of which is divided throughout its length by a corridor, commencing at the first hall, which, opening from the court of entrance, is designed for the reception of the children resorting to the hospital, and thence extending to the further extremity of the structure. On the one side are placed two contiguous wards, admitting each eight children of the female sex; the one of which is denominated the St Mary's Ward, and the other the St Catherine's Ward. In the former is the portrait of Dona Maria de Sousa Holstein, the eldest daughter of the foundress; and in the latter, that of Dona Antonia Catharina Rebello, a highly valued friend of the Duchess and of her daughter. Beyond the second ward is the accommodation for the refectory, with a room for the female convalescents, and two small apartments. These wards and rooms have windows opening upon the highway; and communicate with each other, as well as with the central corridor, so that they can be kept separate when circumstances render this desirable. On the other side of the corridor is a ward for the male children, called the Ward of St Louis, in which is a portrait of Dona Luiza de Sousa Holstein, the second daughter of the Duchess. This fine ward has windows towards the garden, and an exposure to the south. Beyond it is an appropriately fitted up pharmaceutical laboratory.

On the left side of the entrance is an apartment reserved for the Duchess, ornamented by a portrait of Her Majesty Queen Estephania, of grateful memory; with a chapel, a cabinet for the faculty, etc. In the under story, which is on a level with the garden, and opens towards it, there are an excellent kitchen, two bath-rooms for the separate sexes, laundry accommodation, a dead-room, etc. The floor of the wards is of painted wood, with carpeting in the centre and in the line of the doors. The beds are tastefully constructed in iron, painted green, with white curtains, open above; and provided with paillasse, mattress, bolster and pillow of wool, two blankets, linen sheets, and white counterpane. At the head of each bed is a kind of side-table, also of iron, where the patient has a napkin, a glass, a jug for his drinks, a cup and saucer, with knife and fork, and spoon of handsome white metal, imitating silver. Beside each bed is a chair of fine straw, and a marble-topped table, upon which is a spittoon. Every patient has also a towel, and basin and ewer, for his or her exclusive use in washing. Lastly, there are in each ward a thermometer, a cistern of zinc for water, a table for prescriptions, a sideboard, and tables adapted for the children taking their meals in bed. All the doors are handsomely tapestried with green cloth.

The ventilation is effected by the windows, which open from above or below, as required. Possibly it may still be found necessary, especially in the event of the establishing of any new ward, to assist the ventilation by the windows through means of some of the contrivances adopted in such cases.

The medical service of the hospital is conducted by the esteemed medical attendants of the Duchess; and the house duties are under the superintendence of six sisters of charity, two of whom are Portuguese, and of three men-servants, and three women-servants.

We thus gather from this rapid notice, how excellent and liberal are the accommodations and arrangements for the establishment; while we remark, as equally conspicuous, the elegance, and even the luxury, which prevail throughout all its departments. This is due to the ardent zeal and diligence of the foundress, aided, as we learn, by the co-operation of Dom José de Sousa Coutinho, in the fulfilment of the munificent scheme. The elevated sentiments of virtue and generosity in the charitable spirit of the Duchess have led her to the accomplishment of so meritorious a work, creating an institution where the poor may henceforward find a solace under suffering. Hitherto there has been no hospital among us for the treatment of poor children, notwithstanding that it was a matter of pressing necessity: to the Duchess de Palmella we owe the attempt to fill up so lamentable a gap in the public beneficence. The establishment is provided with all that is necessary to correspond duly with its purposes. Assuredly it is one of the qualities which most dignify and adorn our virtuous ladies, that they hold it to be their first duty to assist the poor. It appears that the Duchess de Palmella, already so widely known for her charity, is incessant in planning means to give scope to the generosity of her benevolent disposition; and she has now devised one which marks perhaps the most brilliant epoch of a life, as it were wholly dedicated to the relief of distress. May God preserve for many years an existence so precious, for the protection of multitudes of children hitherto living abandoned by fortune.

We annex the provisional rules which have been framed for the hospital.

Provisional Regulations for the Hospital of St Vincent de Paul.

1. The Hospital of St Vincent de Paul, instituted in the street of St Miguel by Her Excellency the Duchess de Palmella, is destined to receive and treat gratuitously twenty-four poor children of both sexes.

2. The age of the patients to be received into the hospital is restricted for the males to from three to nine years, and for the females to from three to twelve years.

3. The patients, in order to admission, must have been vaccinated; and there must be presented with each an attestation of poverty, signed by the curate or the magistrate of their respective parishes, along with a guarantee for the removal of the child at the end of the treatment. Those recommended by the foundress are excepted from this rule.

4. No patients are admitted with eruptive fevers, such as scarlet fever, small-pox, or measles; nor with chronic ailments, unless exceptionally.

5. Those admitted with chronic diseases can only be retained in the hospital during two months, unless under the most special circumstances.

6. The patients will be distributed throughout three sick wards, and the convalescent wards.

7. Two contiguous sick wards are destined for the female children, and are designated the Ward of St Mary and the Ward of St Catharine. A third ward, entirely disconnected from these, is to be allotted to the male children, and is to be designated the Ward of St Louis.

8. The medical attendants of the institution shall be selected by Her Excellency the Duchess de Palmella.

9. The internal service is performed by Sisters of Charity, and by men and women servants, in number proportioned to the wants of the institution.

10. The hour of visit is from one to two in the afternoon.

11. The admission and discharge of the patients is authorized at the hour of visit by the respective medical attendants.

12. On the entrance of a patient there will be filled up, in as far as possible, the different heads of the hospital schedule, which serves at the same time as a billet of admission, as well as for the register of entrance and discharge. (Register, No. 1.)

13. A note is also taken, on admission, in Register No. 2, of the clothes and other objects brought by the patients; and these shall be washed, secured together, and preserved in an apartment allotted for this purpose.

14. At the visit of the medical attendant, he is to write in the schedule the symptoms which he judges necessary to register, along with the treatment and diet prescribed for the patient.

15. A sister of charity, who superintends the internal service of the ward, enters at the same time, in the diary, the medicines for internal and external use, and the diet ordered by the medical attendant.

16. On the discharge of a child, the information required in the relative schedule is completed, in as far as possible, as well as the Register No. 1, indicating the observations made and the treatment while in the hospital, with such other circumstances relating to the patient as may appear worthy of remark.

17. In the event of a death, the body shall not be removed from the ward to the dead-room, till the decease has been verified by the medical officer in attendance.

18. The corpse, when removed from the ward, must be designated by the proper label, to be taken with it to the dead-room.

19. At the expiry of twenty-four hours from the death, the body is to be removed from the dead-room to the cemetery *dos Prazeres*, having with it its mortuary ticket duly filled up by the medical attendant or attester of the decease.

20. Sundays and Thursdays, from ten to eleven forenoon, are appointed for the visits to the children by their respective families.
—*Gazeta Medica de Lisboa*, May 1860, pp. 129, 142.

DR ADDISON.

We deeply regret to record the death of Dr Addison, of Guy's Hospital, one of the most eminent of British physicians and pathologists, which took place at Brighton, on the 29th June last. Although nearly the whole of his medical career was passed in London, Dr Addison was a native of Newcastle, and had pursued his professional studies in Edinburgh, where he graduated in 1815. Not long after, however, he settled in London, and, in 1824, by receiving the appointment of assistant physician to Guy's Hospital, he commenced his connection with that institution, in which his medical reputation was acquired, and of which, up till nearly the time of his death, he remained one of the most distinguished ornaments. After filling for some years the Lectureship of Materia Medica, Dr Addison was, in the year 1837, appointed physician to the hospital, and had the honour to be associated with Dr Bright in the Chair of Medicine, which he occupied alone on the retirement of the latter, in 1840. During his lengthened career as an hospital physician and clinical teacher, Dr Addison has enjoyed a high and well earned celebrity, and has added materially to the fame of the Guy's Hospital School of Medicine. By his writings he holds a prominent place among British pathologists; and his later discovery of the connection of the Bronzed Skin Disease with lesions of the supra-renal capsules (" Addison's Disease," as some have called it), although the pathology of the affection still remains obscure, have made the medical profession everywhere familiar with his merits as an independent observer and original thinker. His name will hold an honourable place in the annals of British Medical Science.

DEATH OF JOHN K. MACNISH, Esq., SURGEON.

The death, in his 85th year, of John K. Macnish, Esq., during sixty-four years an eminent surgeon in Glasgow, and, if we mistake not, the oldest medical practitioner in Scotland, has just taken place. His son was the well-known Dr Robert Macnish, honourably known in the republic of letters as the Modern Pythagorean of " Blackwood," and the author of " The Anatomy of Drunkenness," " The Philosophy of Sleep," and other works of acknowledged merit.—*Glasgow Herald.*

DEATH OF MR JOHN CRICHTON, SURGEON, DUNDEE.

On July 4th, Mr John Crichton, surgeon, died at Dundee, aged 88 years. Mr Crichton was born at Dundee, on the 22d of February 1772. His father, Thomas Crichton, was a merchant, and one of the bailies of Dundee. After receiving the usual education at the Grammar School of Dundee, and studying Greek and Latin for one session at St Andrews, Mr Crichton was sent to prosecute his medical studies at the University of Edinburgh. He obtained the diploma of the College of Surgeons in 1790, and, on the 12th of July of that year, while still a student, he married Elizabeth Baxter, daughter of Mr John Baxter, merchant and manufacturer in Dundee, she being nineteen and the student-husband eighteen years of age. After their marriage, they resided for some time in Edinburgh, Mr Crichton still prosecuting his studies at the University. On leaving Edinburgh, he commenced business as a medical and surgical practitioner in Dundee, where he soon obtained an extensive and lucrative practice. Great as were his fame and success as a lithotomist, those who knew him best, and are best qualified to judge, are of opinion that his great superiority lay in his strong common sense, and in his power of temporarily concentrating the whole of his mental powers on any subject in which he was interested. Mr Crichton was a strong, powerfully made man, and in his youth was considered to be very handsome. He enjoyed almost uninterrupted good health during the whole course of his long and laborious life.—*Dundee Argus.*

VARIETIES.

The Faculty of Physicians and Surgeons of Glasgow and Dr James Watson.—We are glad to observe that the Faculty of Physicians and Surgeons of Glasgow have expressed their sense of the great services of their present President and late representative at the Medical Council, Dr James Watson, by setting apart a sum of L.250, the interest of which shall, in the manner most agreeable to himself, be devoted to the advancement of medical science and the encouragement of high attainments among the medical students of Glasgow, in commemoration of Dr Watson's name. The occasion for proffering this honour to their President was chosen on the day on which he completed the fiftieth year of his fellowship.

The Medical Council of Education and Registration.—Sir Benjamin Brodie, Bart., having resigned the presidency of the Medical Council, Mr Green, who represented the Royal College of Surgeons of England, has been raised to the president's chair. Mr James Moncrieff Arnott, president of the Royal College of Surgeons, has been elected as their representative in the room of Mr Green.

British Association for the Advancement of Science.—The annual meeting of the British Association was held this year at Oxford, on the 27th June last. The attendance, although less numerous than at Aberdeen last year, was very distinguished. The opening address was delivered by Lord Wrottesley. Several interesting and important medical papers were read, especially on physiological and allied subjects,—the physiological sub-section being presided over by Dr Rolleston, the new Linacre Professor of Physiology in the University. At the concluding meeting on July 4, it was announced that the Association would meet next year at Manchester.

The International Statistical Congress.—The first meeting of the fourth International Statistical Congress was held on Monday, July 18, in the large hall of King's College, London. His Royal Highness the Prince Consort, President of the Congress, opened the proceedings with an eloquent inaugural address. The most eminent statesmen, sanitary reformers, and literary and scientific men of the country,—among others, Lord Palmerston, Lord John Russell, Lord Brougham, the Earl of Shaftesbury, Lord Stanley, Sir David Brewster, Sir John M'Neill, the President of the Board of Trade, the Lord Advocate, Mr Sydney Herbert, Miss Florence Nightingale, etc.,—took part in the Congress; and among the distinguished foreigners who attended were M. Quetelet, M. Legoyt, Baron Czoernig, M. Bernadski (Russia), etc. Much valuable information was laid before the different sections; and plans were proposed for prosecuting statistical inquiries on an extensive scale. The meetings, which terminated on 21st July, were most successful, and mark an important era in the progress of statistical, political, and sanitary science.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Observations on the Trichina Spiralis.* By WILLIAM TURNER, M.B. Lond., Senior Demonstrator of Anatomy in the University of Edinburgh.

SINCE the year 1835, when Professor Owen first described the occasional existence of that remarkable entozoon, the trichina spiralis, in the muscles of man, the attention of many anatomists and pathologists has been directed to the subject. By the inquiries, more particularly of Owen,[1] Farre,[2] and Rainey and Bristowe[3] in this country, and of Luschka[4] and Virchow[5] in Germany, the structure of the worm, its characteristic cyst-like envelope, the peculiarities of its habitat, and its mode of degeneration, have been carefully described, so that our information on these points may be regarded as almost complete. Moreover, the researches of other observers have shown that the trichina is not limited in its distribution to the muscles of man, but that it affects those of the other vertebrata. Thus Bowman[6] has seen it in the muscles of an eel, situated within the sarcolemma; J. B. Chaussat[7] has found it in the muscular coat of the stomach of the common frog; Herbst[8] has detected it in the voluntary muscles of the cat, dog, and badger; and I am indebted to Professor Rolleston of Oxford, for a preparation of a portion of a muscle of the hedgehog, in which trichina cysts were imbedded. A great mystery has, however, always attached itself to the manner of development of the worm, and many ingenious hypotheses have been framed to account for its presence in the muscles.

Attempts have occasionally been made to solve this question by experiment. Thus, in 1852, Herbst gave to three young dogs portions of the muscle of a badger in which trichinæ were imbedded. After the lapse of several months the dogs were killed, and their flesh was found to contain numerous trichinæ. From the uniformity of distribution of the worms in the muscles, Herbst supposes that the germs must have been carried to the muscular system through the agency of the blood, although he acknowledges the difficulty of explaining how the comparatively large ova of these worms were absorbed from the intestinal canal into the vascular system, and then extruded into the muscular apparatus.

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[1] *Transactions of Zoological Society*, vol. i. Article, "Entozoon," in *Todd's Cyclopædia.*

[2] *London Medical Gazette*, Dec. 1835.

[3] *Transactions of Pathological Society*, vol. v., 1854.

[4] *Siebold and Kölliker's Zeitschrift*, vol. iii., 1851.

[5] *Archivs*, vol. xviii., 1860.

[6] *Philosophical Transactions*, 1840, and article, "Muscle," in *Todd's Cyclopædia.*

[7] *C. R. de la Soc. de Biologie*, vol. i.

[8] *Annales des Sciences Naturelles*, 1852.

During the last few months several experiments have been performed in Germany by Virchow,[1] Leuckart,[2] and Zenker,[3] which have apparently cleared up many of the difficulties which previously surrounded the question. These experimenters have administered to various animals, such as pigs, rabbits, and dogs, flesh containing trichinæ. Some of the animals were killed within the first week after the feeding, and in the intestinal mucus, especially of the duodenum and jejunum, numerous minute and delicate thread-like worms were found, which they regard as free trichinæ. Many of these worms possessed complete sexual development. In some of the specimens examined by Virchow ova were found, in others semen cells. In Leuckart's and Zenker's experiments the worms were still further developed, so that some of the ova within the females contained embryoes rolled up spirally, hence the conclusion was drawn that the trichina is a viviparous worm.

The muscles of several of the animals, which were allowed to live about a month after the feeding, were observed, on examination, to contain numerous trichinæ; and, in the case of a pig fed by Leuckart, shortly after the flesh had been administered to it, symptoms of an affection of the intestinal canal manifested themselves. On making the section of this animal, four weeks after the feeding, indications of a spent attack of peritonitis were seen.

Zenker also relates a very remarkable case of a young woman, admitted under his charge into the Dresden Hospital, suffering from febrile symptoms, with abdominal pain and tympanitis. These were rapidly followed by great muscular pains and œdematous swellings, especially of the extremities. The patient died about a month after the commencement of the illness; and, on making a *post-mortem* examination, the muscles were found to contain large numbers of non-capsulated trichinæ. The intestinal mucus from the jejunum of this patient also presented, when examined microscopically, numbers of small worms, which closely corresponded to the trichinæ of the muscles. They proved to be viviparous, for in the middle part of the bodies of the females completely developed embryoes were found.

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[1] *Archivs*, vol. xviii., pp. 330 and 535. 1860.

[2] *Transl. in Quarterly Microscopical Journal*, July 1860.

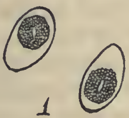
[3] *Virchow's Archivs*, vol. xviii., p. 561. 1860.

On inquiring into the history of this woman, it was discovered that, four days before the commencement of her illness, she had partaken of sausages prepared from the flesh of a recently killed pig. Portions of sausage from the same animal were obtained and examined by Zenker, when they were seen to contain numerous capsulated trichinæ.

The following conclusions have been drawn from the above observations and experiments:—That the trichina, as met with in the muscular tissue, represents the immature condition of a nematoid worm; that, shortly after it is taken into the intestine, it becomes fully developed, and produces numerous thread-like worms, which, after a few days, bore their way through the intestinal walls, and finally reach the voluntary muscular fibres, where they become capsulated.

A subject, the muscles of which contained numerous specimens of the trichina spiralis, having been received into the dissecting rooms of the University during the present summer, I took the opportunity of verifying the experiments already detailed. The worms were observed to move, though somewhat languidly, on rupturing the cysts.

Experiment 1.—Gave to a kitten, on July 7th, portions of trichina flesh. The animal died about thirty-six hours after. On examining the intestinal canal, several specimens of ascaris mystax were found at its upper end, but no visible remains of the trichinæ. On placing a drop of the mucus under the microscope, several ova were seen lying free in it; this observation was repeated in the mucus taken from different parts both of the large and small intestine, and, in almost every instance, one or more ova were found in the specimen examined.



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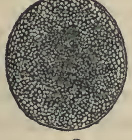

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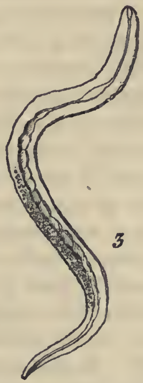

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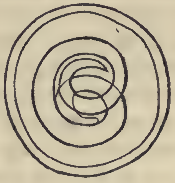

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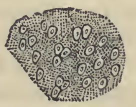

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Fig. 1. Free ova from the intestinal mucus of a kitten, × 195 diam.
Fig. 2. Ovum from the generative tube of an ascaris, × 195 diam.
Fig. 3. Worm from the intestinal mucus of a cat, × 195 diam.
Fig. 4. Cyst containing worm from muscle of a cat, × 80 diam.
Fig. 5. Nuclei and granular matter from interior of trichina cyst of cat, × 195 diam.

In each ovum (Fig. 1) a distinct nucleus was visible, surrounded by more or less granular matter, between which and the external investing membrane there was generally a clear space, varying somewhat in its extent. It is difficult to account for the origin of these ova. At first it was supposed that they might be derived from the ascarides present in the gut; but a comparison of their size and appearance with the ova within the generative tube of the ascaris, at once showed that this was not the case, as the latter, in addition to having the granules diffused much more uniformly through them, were also very much larger (Fig. 2).

Although no remains of trichinæ or their cysts were discovered in the intestine, yet it could not be doubted that the animal had swallowed many of them, for it was seen to eat the flesh freely; a sufficient length of time had elapsed between the feeding and death of the kitten to allow of their excretion. Are these free ova, then, to be regarded as derived from the trichinæ? To this question it is difficult to give an exact reply; for it may be objected, that the observations already related in a former part of this paper show that the trichina is a viviparous worm, the ova developing within the body of the worm, and not in the surrounding medium in which it lives. Although I am unable to offer any satisfactory explanation of the origin of these ova, I think it right to record the fact of their existence.

Experiment 2.—Administered to a cat on July 7th, 13th, and 16th, portions of trichina flesh, in the intervals feeding it on bread, milk, and fish. It is doubtful whether on the two last occasions the trichinæ were alive. Killed the cat July 24th. In the jejunum several specimens of ascaris mystax were found, and in the ileum a small tænia, but no remains of trichinæ cysts. The intestinal mucus presented to the naked eye nothing remarkable; but on placing a drop of it under the microscope, three or four thread-like worms were seen actively moving about in it, at one time coiling themselves up in a spiral manner, at another elongating themselves. Every drop of mucus taken from the small intestine contained one or more, and occasional specimens were also found in the mucus both of the large intestine and the stomach. Free ova were also here and there met with of the same size and appearance as those seen in the ovarian tube of the ascaris.

Each of these thread-like worms was about 1-40th inch long, and 1-1000th inch broad, with a pointed and a rounded end (Fig. 3), in size being about two-thirds smaller than the trichinæ met with in the muscles of the same cat. In structure the worm was transparent, so that a canal could be distinctly traced within it from the rounded almost to the pointed extremity. It was somewhat difficult to say whether this canal extended as far as the pointed extremity, or terminated a little on one side of it, although the former is the more probable view. In the middle third, and partly also in the narrower end of the worm, a sacculated or cellular appearance was observed, apparently surrounding the alimentary canal, and on one side of this a collection of granular matter was seen.

The muscles of this cat, to the naked eye, appeared quite normal; but on placing a portion of the latissimus dorsi under a low magnifying power, several cysts containing trichinæ were seen in it. In the external oblique they were also found, but I did not observe any in the transversalis. In the diaphragm and psoas muscles a few existed, but in smaller proportion than in the more superficial muscles. They were also sparingly distributed in the muscles both of the fore and hind limbs. When the cysts were isolated, and examined under a higher magnifying power, they presented a shape differing from that which we are most familiar with in the human muscle. Instead of being elongated, and possessing one or two well-marked poles, they were almost all round, or with but a slight tendency to the oval form. The walls were thin and transparent, and of an almost uniform thickness throughout the entire circumference, in structure being faintly granular or striated. The cavity within each cyst was round, or nearly so (Fig. 4). Owing to the transparency of the wall, the spiral arrangement of the worm, and even the leading features of its anatomy (which corresponded exactly with those which we are familiar with in human muscle), could be readily examined without rupturing the cyst. In no instance did I see more than one worm in each cyst. Gentle pressure upon the glass cover readily expelled the worm, when it was seen to move about in the fluid. Along with the worm, a considerable quantity of a viscid material, containing granules and numerous nuclei, each with its enclosed nucleolus, was extruded (Fig. 5). These nuclei, or small cells, as they might with equal propriety be called, probably fulfil an important office in connection with the nutrition of the worm, by absorbing from the surrounding textures the materials necessary for its nutrition. Nuclear or cellular particles of a similar nature I have also seen frequently in the trichina cysts from human muscle.

The muscular fibres surrounding the cysts exhibited no appearance of fatty degeneration, neither were there those large collections of fat-cells about the exterior of the cyst, which are so common in the muscles of man.[1] Virchow, in his paper already cited, puts forward the hypothesis, that the trichina lies within the muscular fibre, and not between adjacent ones, as is generally supposed, and that the cyst wall is formed by thickened sarcolemma, and not by hypertrophy of the connective tissue. He bases this view partly upon theoretical grounds, and partly upon the fact that Bowman and others have observed nematoid worms inside the tube of sarcolemma. Although I have made numerous observations bearing upon this point, yet I have not been able to satisfy myself of its correctness.

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[1] I may mention, that, in the examination of trichina cysts in the human muscle, especially where the fat-cells have been at a minimum, I have frequently found numerous nuclei lying in the tissue immediately outside the cyst; these were always especially abundant about the poles.

The conclusions which may be drawn from the experiment I have now related appear to me to be the following:—The interval which had elapsed between the feeding and the death of the cat had given time for the trichinæ which it had swallowed to propagate in its intestine. Many of the young trichinæ still remained in the gut, and constituted the thread-like worms which I have described as existing there. Others had emigrated from the gut, and, after working their way into the muscles, had become encysted. The cysts themselves exhibited all the characters of having been recently formed; for they were almost perfectly transparent, and they exhibited no deposition of calcareous particles either in their walls or cavities; besides, there was an absence of fatty degeneration in the muscular fibres surrounding them, and of the deposition of fat-cells in their vicinity. Lest it might be supposed that the thread-like worms found in the intestine of this cat were derived from the ascarides dwelling there, I examined the intestinal mucus of a healthy cat, to which no trichina flesh had been given, but in whose canal living ascarides were present, but no trace of such worms were seen. Moreover, it must be borne in mind, that whilst the ascaris mystax appears exclusively to inhabit the duodenum and jejunum, the thread-like worms were found both in the large and small intestine.

But, whilst the conclusions which I have drawn tend to explain, more satisfactorily than any other, the sequence of events, yet it must be confessed that certain links are still wanting to render the chain of evidence complete. In such an extensive emigration as must here have taken place, one would have expected to have found indications of the passage of the worm through the intestinal wall; but, although I examined microscopically several dozens of sections made through different parts of the wall, I could see no trace of such passage, neither could I find any worms lying free in the peritoneal cavity. It should be mentioned, however, that Virchow has met with them in the mesenteric glands, and Herbst also has seen them in the mesentery of a small owl. One would also have imagined that those muscles which surround the abdominal cavity—viz., the diaphragm, transversales, and psoas—would have contained the worms in greater abundance than the muscles situated nearer the surface of the body, which was not, however, the case. It was long ago remarked by Owen, that the superficial muscles of the human body were much more abundantly affected than those more deeply situated. In special examinations which I have made of several bodies, I have invariably found this to be the case, the pectoralis major, trapezius, latissimus, and external oblique containing more cysts in a given space than the pectoralis minor, rhomboideus, and internal oblique or transversalis. Moreover, the cysts are much more extensively distributed near the superficial than the deep surface of the same muscle,—a fact of considerable interest, for it shows the tendency which the worms possess to work their way towards the exterior.

When the worms have once reached the muscles and become encysted, they remain dormant, many of them undergoing calcareous degeneration. If it should so happen that the flesh containing them should be swallowed by another animal, then they become developed in its intestine. In Zenker's case, and in the pig fed by Leuckart, the emigration of the worms from the intestine to the muscles, and their presence in the latter, produced well-marked symptoms, which in Zenker's case led to a fatal termination. Up to the present time this is the only recorded instance of death being occasioned by the worm, or even of symptoms being produced which might lead to the supposition that it was present. I have compiled from the various medical journals the following table of recorded cases, and appended to it six cases which have come under my own observation:—

Authority.	Sex.	Age.	Disease.
Owen, ...	M.	50	Tubercles and Bright's Disease.
,, ...	F.	...	Sloughing Ulcer, and Diarrhœa.
,, ...	M.	Aged.	Not stated.
Wood, ...	M.	22	Acute Rheumatism.
Farre, ...	M.	Middle Age.	Tubercles.
Curling, ...	M.	58	Fractured Skull.
,, ...	M.	60	Fractured Ribs.
Gairdner, ...	M.	60	Purulent Infection of Blood.
Millar, ...	F.	49	Tumour of Tongue, probably cancerous.
Luschka, ...	F.	80	Old Syphilitic Disease.
Rainey and Bristowe,	M.	56	Pulmonary and Cardiac Disease.
Henle, ...	M.	60	Not stated.
Zenker, ...	F.	20	Pyrexia, Tympanitis, Abdominal and Muscular Pains.
Turner, ...	M.	60	Paralysis following Apoplexy.
,, ...	F.	79	Old Age and Debility.
,, ...	M.	66	Cancer of Pylorus.
,, ...	F.	49	Unknown.
,, ...	F.	60	Asthma and General Debility.
,, ...	F.	37	Meningitis.

With two exceptions, Wood's[1] and Zenker's cases, the remainder had reached the middle or advanced periods of life, and had died of debilitating disorders—such diseases, in fact, as most commonly terminate life at these ages. No record is given of symptoms which could be referred to the emigration of the worm from the intestine to the muscles, and, if ever these occurred, they were probably so far back in the life of the patient as to have escaped his recollection. That it is quite possible for the active exercise of the muscles to be performed, and for the individual to be apparently in sound bodily health, even with the encysted worm present in the muscles, is proved by the two cases recorded by Mr Curling.[1] These men were both suddenly killed by the receipt of severe injuries, whilst engaged in the performance of severe manual labour.

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[1] *London Medical Gazette*, May 1835.

With regard to the comparative frequency of the trichina in man, I am disposed to look upon it as much more common than is generally supposed, between one and two per cent. of the dead bodies which have come under my observation during the last five years having been so affected.

ARTICLE II.—*Observations on Typhus and Typhoid Fevers as seen in Dublin.* By HENRY KENNEDY, A.B. and M.B., Physician in Ordinary to Sir Patrick Dun's Hospital.

(*Read before the Royal Medico-Chirurgical Society of London, May* 1860.)

IN the following paper I would ask attention to the subject of fever, particularly the types of the disease known as typhus and typhoid. I may be allowed to state that, many years since, opportunities were afforded me of seeing the disease at Geneva and Paris. This occurred after I was familiar with the aspects of fever as it presents itself to our notice in Dublin; and had naturally the effect of bringing the subject very forcibly before me. The result was a paper which appeared in the *Dublin Medical Quarterly Journal* for the year 1837; and which, I believe, was amongst the first in Europe that drew the broad lines of distinction between the two types of fever. This point would not be noticed here, were it not that a paper, by Dr Stewart of Glasgow, which was not published till three years later—that is, in 1840—has usually the credit of it. Whilst speaking of gentlemen who have worked in the same field with myself, it is, however, anything but my wish to undervalue their labours. Several of them have brought out works of considerable size and great merit; others, papers of a most elaborate kind; whilst one and all have given a precision and value to the several diagnostic symptoms between typhus and typhoid fevers, to which what was published by myself did not pretend. In this particular walk I find the names of Gerhard, Pennock, Bartlett, Flint, Shattuck, Hale, Jackson junior, and others; of Broussais, Andral, Louis, Chomel, Valleix, Huss, Petit and Penes, Lombard, Staberoh, Landouzy; and of Bright, Tweedie, Stewart, Jenner, Budd of Bristol, Murchison, Hudson, Davidson, Christison. After all that has been written, however, it may be asked, Is the question yet settled? Are typhus and typhoid two distinct fevers; or the result of but one poison? To the last question, for my part, I must answer in the affirmative; and it was to give my reasons for so viewing the matter, and to detail my additional experience of more than twenty years, since the first paper appeared, that I now venture to address this Society. Before entering on the special object of the paper, there is, however, one point, of a general kind, a notice of which may not be misplaced. It is, I believe, a very common impression on this side of the Channel, that fever, as it shows itself in Ireland, is essentially typhus; that is, as I understand it, a disease which, in the majority of cases, would be marked by the occurrence of petechiæ. Now, this is an erroneous impression. Once only during the last fifty years—in the great epidemic of 1817–18—was there an approach to this; and then the numbers were, as near as may be, equal; and, in some few places, the spotted cases did exceed those without any. Under my own observation I have occasionally seen the spotted cases constitute one-third of those in hospital. In the epidemic of 1847–8 those with spots were very rare, not occurring oftener than once in fifteen cases. The disease, as seen then, was essentially a relapsing fever, at least it was so in Dublin. But if we look again at France and Germany, what do we observe? Is it but one type of fever,—such as many of the writings of the day would lead us to suppose? No such thing. For, whilst one form of the disease is predominant there, the others are also to be met with.

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[1] *London Medical Gazette*, January 1838.

In America, too, at least in those parts where the climate corresponds with our own, the same state of things exists; and there they have their typhus and typhoid, as confirmed by both their earlier and later writers. Thus the conclusion seems legitimate, that in France, Germany, America, Sweden, Great Britain, and Ireland, the fever of each country exhibits very much the same aspects, and it is certain typhus and typhoid are to be met in each.

And now, to come back to Ireland, which concerns us more immediately, the question may be asked; If typhus be not the predominant fever of the country, what is? The answer to this involves directly the consideration of the point to which your attention is invited this evening; that is, whether typhus and typhoid are two distinct fevers, or the result of one common poison. For myself, I must avow my adhesion to the latter view. No other, as it appears to me, meets so satisfactorily the varied aspects of the case, or the difficulties which surround the question; for, that there are difficulties, all, I think, must admit. For the sake of clearness, I shall divide the arguments into general and special.

And here, "in limine," is an argument which, though often discussed, does not appear to me to have received all the attention to which it is entitled by those who advocate a plurality of poisons. These say that typhus, typhoid, and relapsing fevers are the result of distinct poisons; and there they leave the question. But are all the facts included in this statement? I must answer in the negative; for, without any refining or wire-drawing, there are other types of fever just as distinct, which are of frequent occurrence in Dublin. Of these may be mentioned congestive typhus, febris nervosa, and gastric fevers; and you will observe that these have all been described as separate types of disease—the former by Armstrong, the febris nervosa by the master pen of Huxham, and the gastric fevers by several. Nor can I for a moment suppose that these are due to separate poisons; for, when a family of four to six persons are admitted into hospital, coming too often from the one room, and that these types of fever prevail, the father is almost sure to exhibit the congestive typhus, or nervous fever, while the mother and children show the gastric type. Some, too, will have spots; others not. Here, then, are difficulties of no common magnitude, and facts which in a question of this kind cannot be ignored; and if the advocates of the plurality of poisons *will* maintain this view, they appear to me to be only adding difficulty to difficulty by multiplying poisons, which, it is to be observed, all belong to the one disease, for no one has ever maintained that the several types were other than fever itself.[1]

Speaking of the types of the disease reminds me that fever in Dublin varies almost constantly with the season. Thus, as summer approaches, but more particularly if the temperature be higher than usual, the fever is sure to change into the inflammatory type, no matter what it may have been, becoming the synocha of Cullen, marked by the intensity of the symptoms and the frequent occurrence of epistaxis, which, notwithstanding all that has been written of late against blood-letting, is almost certain to prove beneficial. Again, in autumn the disease becomes gastric, being often ushered in by symptoms of cholera, and far more than the usual amount of irritability of the stomach and bowels. This latter form of fever is frequently remarkable for its great duration, and often runs out to the fourth week. To whatever cause we are to attribute these varied types, and occurring so regularly at certain seasons of the year, few, I presume, will trace them to separate poisons; and yet all are really very distinct phases of fever, and have been long so considered.

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[1] The following passage was printed in the year 1849, just after the cessation of the great epidemic of 1847-8:—"But though I speak of typhus and relapsing fevers as of different types, I would not have it thought that their nature was different. On the contrary, all my observation goes to support the idea that the two fevers are but part and parcel of the same poison. On no other principle can I explain the fact, which repeatedly came under my notice, viz., that from the same room, amongst members of the same family, and often sleeping in the one bed, these two types of fever were to be seen. The same poison, in fact, generated both. In corroboration, too, of this view, I may state, that I saw cases where the first part of the attack was of the character of relapsing fever and the second of typhus. I saw cases showing no eruption during the first attack of fever, but presenting well-marked petechiæ in the relapse. Cases, too, were not uncommon where, without any early crisis, symptoms of typhus appeared suddenly about the tenth or eleventh day. For these reasons, then, I would not separate these two types of fever, but merely look upon them as different phases of the same poison."

Have the advocates for the plurality of poisons given the due weight to the analogical argument, as it may be called? I think not. For what do we see, if, for example, we take scarlatina? Literally every type of fever as it is to be seen in the ordinary disease. We have cerebral, gastric, and enteric complications—all the varieties of rash, and duration of disease, to the most exact likenesses, if it may be so expressed. And yet I am not aware that there has been any occasion to seek here a plurality of poisons, though the grounds for so doing appear to me just as valid as in the other instance. But if a number of poisons be not necessary to explain the phenomena of scarlatina, neither then, as it appears to me, are they required in our common fevers.

Leaving, however, the general view of the subject, and coming to details, do we then find anything contradictory of what has been already advanced? I believe not. On the contrary, it has appeared to me that the more minute our inquiries are, the stronger our convictions must become against the idea of a plurality of poisons. For what single symptom can be advanced as specific? I shall take the spots of typhoid fever, as so much attention has been given them in the investigation of this question; and here I am free to allow that enteric fever is very constantly characterized by the particular eruption now so well known. But then, on the contrary, exceptions and varieties are by no means uncommon. Thus, all admit that typhoid fever may exist without any spots whatever. It is not, however, so generally known that the spots may be present, though not the fever itself. With this fact I have been long familiar, but was not at the time when the first paper appeared. In the end of 1856 and beginning of 1857, the number of cases of this kind—that is, where the spots of typhoid fever existed—was truly remarkable. Yet there was no other symptom of this form of fever; nor, in truth, was it the disease at all.

Again, a double rash may exist on the same patient, and at the same time. Thus I have often seen petechiæ on the body, and a bright, well-defined rash on the arms; and either may take precedence of the other. Nor is this observation original; for, if I recollect right, Grant, in his able work, has specially noticed it. All such cases have, in my experience, been prolonged above twenty days.[1]

In another phase, too, different rashes have often come under my notice. When a family is admitted affected with fever, and they exhibit spots, the parents, particularly the father, have petechiæ; whilst the other members have frequently a bright and defined rash, as analogous as may be to cases of scarlatina occurring in one family, and at the same time.

In the last place, I have seen instances of typhoid fever in which the rash was petechial; so much so, that it was only a *post-mortem* examination which disclosed the real character of the disease. The Society will probably allow me, on a point of this kind, to give the briefest details of a few cases.

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[1] Some recent writers, amongst whom may be specially mentioned Landouzy, have, I find, also noticed this fact.

Case 1.—A girl of 20 years of age was attacked with fever of a very severe kind. It was attended by raving; petechiæ observed as early as the sixth day, and which went on increasing; diarrhœa with tympanitis. Matters went from bad to worse, and she died, as well as could be ascertained, the thirteenth day of her illness. The lower portion of the ileum was found extensively ulcerated.

Case 2.—A boy, who, though only 14 years of age, had already learned to drink, was attacked with fever after exposure to wet and cold. His state was such on admission, that it was not possible to ascertain the duration of his illness. He had a great tendency to stupor, with much injection of the eyes; and there was marked moaning, at first at night, and subsequently in the day-time. He had a crop of petechiæ over his body. With these symptoms there was a tendency to diarrhœa, with considerable tympanitis, and the stools ultimately became involuntary. The extremities then got livid and cold; the pulse quicker from day to day; and so the boy died, after being nine days in hospital. On examination, extensive ulceration, in patches, was found in the lower part of the ileum; the brain presented the usual appearances found in fever, but in a lesser degree than common.

In this instance I had a vague impression that some lesion existed, but I was not prepared to find it in the intestine; for, at the period this case occurred, a petechial rash, with marked cerebral symptoms, were signs which I then thought were not to be found in union with typhoid fever.

A short time subsequently to this case, the following occurred, both being met with early in the year 1846:—

Case 3.—A girl of 20 years of age was admitted into hospital, but, like the last case, so ill, that no accurate date of the duration of her illness could be obtained. She was covered with a petechial rash, so dark in one inguinal region as to amount to purpura. There was a good deal of stupor; and with this she had diarrhœa, tympanitis, and evinced pain when deep pressure was made over the ileo-cœcal region. There was also general bronchitis of the larger tubes. It is enough to say of this case that she recovered, after a most protracted illness, partly due to the occurrence of bed-sores, which formed in spite of every care, and partly to the length of time required in the healing of the intestinal lesion, which, I believe, existed, as shown at this period by the very delicate state in which the bowels remained, for she had intercurrent diarrhœa and fever on her for weeks.

Though the following has already appeared in the pages of the *Lancet* and *Gazette* of the current year, it is so remarkable, that I may be allowed to give it a second time:—

Case 4.—Hill, a girl of 18, sanguineous temperament, and fine skin, admitted into Sir Patrick Dun's Hospital in January of the present year, being then nine days ill. She presented all the signs of typhoid fever, including diarrhœa, gargouillement, pain on pressure, tympanites, and, the following day, the characteristic spots, visible on the abdomen. From this they spread to the chest, arms, and finally the face, forming a much more copious rash than is usual in this type of fever, but interspersed here and there with spots I could not distinguish from petechiæ, being of larger size than the others, ill-defined, and of a darker colour. My colleague, Dr Smith, saw the case at this period. By the fourteenth day of the fever all the enteric symptoms seemed to have subsided; but with this improvement there was not a corresponding one in the general state of the patient. Her nights became restless; she shortly lay on her back; sordes of the darkest colour appeared about the nostrils, lips, and on the tongue. She got great tremor of the upper extremities, with picking of the bed-clothes; the pulse rose, eyes became injected, and, finally, the brain engaged. In this way she lived to the twenty-first day of her illness. . . . The abdomen only was examined. Except in the ileum, nothing abnormal was found; and here the amount of disease was of the very slightest. Peyer's patches were more developed than natural, and the more so as they approached the cœcum. One, in particular, of 14 or 15 lines in length, by 6 in breadth, was brought out in strong relief; but there was no ulceration whatever, nor could the state of the intestine be described otherwise than as one where some slight irritation had been going on during life. The specimen was exhibited before our Pathological Society.

In this case the sequence of events was very remarkable, such as I have not met with before, nor had Dr Stokes, who was present at the details of it, and who, I may mention in passing, has been long opposed to the views of those who believe in a plurality of poisons.

Though the cases just given have a special reference to the character of the spots met in connexion with typhoid fever, it is yet to be observed, that this was not the only point they might have illustrated. For you will recollect, that the cerebral symptoms were, in all, of a very marked character, and therefore differed from what is met with in the ordinary run of cases of typhoid fever; and indeed I may observe here, that, in my own experience of this type of fever, the implication of the brain is much more common than might be inferred from the writings on the subject; and on this point I find I am fully borne out by the cases given in the last work of the late Dr Todd. In most of these the brain was deeply engaged.

But some may say here, "Granting that exceptional cases, and of a very marked kind, may exist as to the character of the spots, there are yet other symptoms which mark this type of fever, such as diarrhœa, intestinal hæmorrhage, etc." Quite the contrary; for if there be exceptional, or, I should rather say, contradictory facts, as regards the spots, there are many more in reference to any other symptom; and did time permit, I could take up any single sign, and show, by numerous examples, how common it was to both types of fever. But I shall only glance at one other, which, as being a very marked one, may call for a passing notice; I mean intestinal hæmorrhage. It is, I believe, generally thought now, that this symptom marks typhoid fever, rather than typhus. Under my own eye, in Dublin, this is not so; and it would appear to be a rare complication in Paris, for out of fifty cases given by Louis, there were but two in which it was noticed; and the same may be said of other French writers. Whereas in London, in the cases detailed, it occurred in a third of them. This is a curious point of contrast, and appears to show what caution is required in saying that this or that symptom marks typhoid fever, or its absence typhus. My own conviction is, that intestinal hæmorrhage prevails more at one period than another; at least it is so with typhus, of which, in another place, I have given the details of some thirty cases; and yet none of these were instances of typhoid fever; nor in the fatal cases examined was any ulceration found.

But though this particular part of the subject might be continued much longer, as time will not allow, it may be well to sum up what has been advanced, and state the conclusions at which, after the fullest consideration of the question, I have arrived. This will probably be best answered by throwing all into the following propositions:—

1. That typhus and typhoid fevers exist in Paris, London, Sweden, parts of America, and Dublin; and relapsing fever in Great Britain and Ireland.

2. That in Dublin, other types of fever exist, equally distinct from any of these; of which gastric, remarkable for its great duration, the congestive typhus of Armstrong, the febris nervosa of Huxham, and in summer, the inflammatory fevers may be adduced as examples.

3. That these may exist in the same family, and at the same time.

4. That when a whole family is attacked at once, some may exhibit spots, and others not.

5. That two crops of eruption, as observed long since by Grant, are not uncommon in the typhus of Dublin; and either may precede the other.

6. That one of these may be a bright red, and the other of a much darker hue; and that they often co-exist.

7. That petechiæ may exist with typhoid fever; and bright lenticular spots without this fever.

8. That bright lenticular spots may be followed by petechiæ.

9. That it would seem as if typhus and typhoid fever could exist in the same patient, and at the same time.

10. That whilst in London intestinal hæmorrhage is common in typhoid fever, it is much rarer in Paris and Dublin.

11. That in Dublin the same hæmorrhage is not uncommon in typhus.

12. That cerebral complication is more common to typhoid fever than is usually taught.

With these propositions, then, or shall I say, facts, kept in view, it appears to myself most difficult to arrive at any other conclusion, than that typhus and typhoid fevers are the result of a common poison. This, I think, is the philosophic way to look at the question: it is in perfect keeping with the analogy derived from the effects of other poisons, as scarlatina; but, above all, it reconciles best the many difficulties which meet us in the opposite view of the subject.

It is scarcely necessary to observe, that no theory is tenable, and that must be called a theory, no matter which side we take, which does not explain all the facts of the case; and this is the position in which those are placed, who hold to a plurality of poisons; for I consider that so much has been advanced this evening, as to create very great, if not insuperable difficulties, in the way of those views. And here I venture to ask the following questions:—Is it prudent, in treating a question of this kind, to limit oneself to a particular locality? With the same disease existing over great part of Europe and America, would it not be well to ascertain the facts as found there? I think it would; for in this way, and this way only, can we arrive at any safe conclusion, by avoiding the errors sure to arise when we argue from too few facts.

But some one may say here, if one poison only exist, how do you then account for the varied types of fever? A complete answer to this question cannot probably be given. To myself it has long appeared, that four causes, at least, may be stated, which seem capable of explaining, in great part, the differences. These are temperament, habits, constitution, and amount of poison taken into the system. Time does not allow me to dwell on these, though, I believe, few would be inclined to doubt their influence. But one or two remarks may be made. Thus, that temperament modifies fever, scarcely admits of question. I have never met the type, known as "Febris Nervosa," except in persons of a marked nervous temperament. Again, drinking habits, as every one must have seen, exert a powerful influence; and a mixture of delirium tremens with ordinary fever is but too common. I would more particularly, however, notice the third—that is, the constitution—as playing a most important part on the type of the fever. Let any one call to mind a person of delicate frame affected with the disease, and he cannot fail to have observed its great duration, and the obstinate way in which its symptoms persist,—now threatening the abdomen by diarrhœa, and, among children, by no means uncommonly, by hæmorrhage; again, the chest will be seriously engaged; or finally, the patient may be carried off by brain affection. Such points would not be noticed here, were it not that I have a strong conviction on my mind that it is a something in the constitution which leads to the typhoid type of fever. It has been long matter of observation to me, that this particular fever is very generally seen in persons of fine skin; and I believe I have often met it where no ulceration of the bowels occurred; for I look upon the local lesion as quite secondary to the fever itself. No other view of the subject, as it appears to me, will account for what is well ascertained, viz., that in fatal cases the local lesion is frequently not in unison with the result. At times there is only enough to show that a tendency to the disease was present; and yet the case has proved fatal. It is, in truth, the fever, not the lesion, which has caused death.

Nor does this affect the opinion, that ulceration may, in its turn, injure the system,—a view which the late Dr Todd believed in, and has advanced in his last work. I cannot but think that this fact—I mean the disproportion between the amount of ulceration in the ileum and the fatal result—is one of the greatest importance in the question under discussion, as explaining those anomalies, of some of which examples have been given this evening, such as a union of the two types of fever in the one subject.

The analogy, too, of other diseases, might be adduced here. Thus, who has not seen cases of fever, and of a very severe character too, usher in the rash of small-pox? or who has not been kept in suspense by the fever which often precedes for days an attack of erysipelas? It is well worthy of notice, too, that in such cases the amount of rash, or extent of surface engaged in the latter disease, is frequently very slight. Does any one doubt the possibility of the occurrence of the gouty habit, attended by most serious indisposition too, and yet no "local habitation nor a name" to be found for such a state? Phthisis, likewise, though a chronic disease, bears out what I am speaking of; and it is really curious to notice the similarity of the lesions of the ileum, when found, as they often are, in this disease, and as they exist in typhoid fever. I have seen cases where it was not possible to see which was which; and, strange as it may appear, the question has been forced on me more than once; Can it be possible that the intestinal lesion of typhoid fever is due to the strumous diathesis? This question must be left here unanswered.

It appears, then, clear to myself, that when we consider the analogies of other acute diseases, such as small-pox, erysipelas, etc., we are fully justified in looking at typhoid fever in the same aspect, and in considering the lesion as secondary to the fever. This view, I must repeat, accounts in the plainest way for the contrasts found in the amount of lesion present; and it cannot be too clearly understood, that fatal results occur where the abdominal lesion will not, by any means, account for it. If a case of this kind were wanting, I have only to refer you to the *Lancet* for April 28th of the present year. In it a case is given by Dr Bristowe, and the specimen was laid before your Pathological Society, in which there was only an enlarged state of the patches of Peyer, and without any ulceration whatever. This case is very remarkable for its short duration, as it is stated that it proved fatal in five days.

The last cause mentioned as capable of modifying fever—the typhoid amongst others—was the amount of poison taken into the system; and it may, I think, be questioned, whether this point has received the attention it merits. One remark only, from want of space, can be made on it here, viz., that the experiments made by Gendrin and others on the lower animals, show clearly that the amount of poison thrown into the system bore an exact proportion to the consequences which ensued; that when the quantity was small, the symptoms were mild, and *vice versa*, till death itself took place. Hence there are some grounds at least for the idea, that the fever poison may produce effects bearing a ratio to the amount taken into the system, and so causing a fever which may be of the mildest or most malignant character, and explaining, to some extent, the varieties which fever cases are ever presenting, typhoid fever amongst the rest.

Most of the arguments advanced in favour of the plurality of poisons have now been noticed. But some, and the question of contagion in particular, have been purposely omitted. For I really think that too little is known on this last subject to sustain an argument on either one side or other. What positive fact have we to rest on? None that I know of. If it be maintained that typhoid fever is less contagious than typhus, I would refer my hearers to some able papers, by Dr Budd of Bristol, published not long since in the *Lancet*, where the contagious, or, I might say, highly contagious character of typhoid fever is proved as clearly as the subject admits. Or, if it be said that typhus and typhoid do not come from the same locality, I would direct attention to the statements to be found in Huss' valuable work, in which the two types arose under exactly the same circumstances; and, what is particularly worthy of note, that there was also an intermediate form between the two: or, again, that in one house, and in the course of one fortnight, 17 cases occurred, of which 10 were typhus and 7 typhoid fevers. These facts, then, were there no others, must teach us to be slow in pronouncing typhoid fever to be little contagious. But I repeat, that the whole question connected with contagion is so obscure that it is much better left out.

Before concluding this paper, I would venture to make a few remarks on the treatment of typhoid fever. But they shall be of a very general character. And here I feel that this part of my subject is one of no little difficulty; for you are all aware of the very great change which, within a late date, has come over many in the profession, and which may be said to be embodied in the last work of one whose loss all must regret—I mean Dr Todd.

Of this change I shall only say that it has not reached us in Dublin, nor do I think it will. It will be understood that I am now speaking more particularly of the stimulant treatment of fever, —a plan which all our leading physicians have long advocated and acted on. But then there is this difference between us in Dublin, and what has been lately advocated; we do not use stimulants because we have fever to treat, but because the particular case requires them. We know that fever is a depressing disease (few indeed are not), and that it has a tendency to lower the powers of life; but we also know that a certain lowering is essential to nature's cure; and from the way that she points out we are very slow to depart. Hence we do not use stimulants so generally, or so much as a matter of course, as has been advocated elsewhere. This much I may say, however, that in particular cases I have known a very large quantity of them given, and this many years ago—as much as two bottles of wine and half a pint of brandy in the 24 hours, and with the best results.

Whether there be any essential difference in the intensity or degree of the fever of London as contrasted with Dublin, I shall not take on me to determine. But this fact may be stated, that with us the cases which have hæmorrhage, no matter from what source (and the fact has been already glanced at this evening), do, in the great majority of instances, recover, and are frequently benefited in a very marked way by the occurrence. Exactly a similar remark, too, may be made about diarrhœa. Hence in Dublin, and with such facts before us, the depressing effects of fever do not alarm us as much as appears to be the case here, nor are stimulants used to the same extent. You will observe, then, that the question before us is not so much one of actual difference as of degree. All parties are agreed that stimulants are to be used; but in Dublin it is considered that this mode of treatment may, like any other, be pushed too far. Tempting, however, though the question be, it is not possible to pursue it further now.

Speaking of the use of stimulants in fever, leads directly to one of the points of treatment to which I would call attention, and which may be put in the form of *quere*. Are stimulants as a class used too indiscriminately? I must answer this in the affirmative. It seems to be a very general impression, that if stimulants are to be used, it matters little of what kind they are. Hence brandy, wine, beef-tea, etc., are constantly spoken of as being given to the same patient. This is surely not the proper way of dealing with such a matter. With the knowledge we now have of the varied composition of these fluids—for the most of them are fluids—it appears to me to be injudicious to use them as is done at present; and I would particularly notice here the difference between wine and beef-tea. For a long period I have been convinced in my own mind that these two cannot be used indiscriminately; for it has been matter of observation to me that their effects are very different. Of the two, and contrary to what is usually thought, wine may be given with much less risk of unpleasant or injurious effects following, than beef-tea; and when the latter is given indiscreetly, either as to time or quantity, it is very apt to be followed by secondary inflammations, which often cause fever cases to be so precarious in their results. It appears to me that the differences spoken of as resulting from the use of the two fluids are well accounted for by a consideration of the difference of their composition; the amount of nitrogenous material—chiefly in the form of fibrine—being so very much greater in the beef-tea than in the wine. On the other hand, the latest, and, as I believe, the best analysis of wine, that by Mulder, shows us that it contains, but only in the very smallest quantities, several of those matters which are essential to our frames; such as albumen, iron, etc. And this analysis bears out, curiously enough, the remark of two of our ablest physicians on fever—Drs Cheyne and Barker—made above forty years since; viz., that, after a trial of whiskey, which was used for the sake of lessening expense, they found that it would not supply the place of wine.

The point brought under notice, and which I am not aware has been specially alluded to by any writer, would seem to be one of very considerable moment, as bearing directly on the treatment of not only fever, but of other acute diseases. Enough, however, has been advanced to call attention to the subject, and show the discrimination that is to be exercised. Cases, of course, will occur where both classes of stimulants may be used at the same time, and with the greatest advantage. But the point is, that they are not necessarily to be so used, and that mischief may result if a proper judgment be not exercised.

One word more about stimulants, or rather a particular stimulant, now much used in fevers, typhoid amongst the rest: I mean the carbonate of ammonia. Is it suited for these diseases? I think not; nor, for many years past, have I used it for such. I had observed that diarrhœa was exceedingly apt to follow its use. In cases of typhoid fever this would not have been so remarkable; for diarrhœa is there a symptom of the complaint. But it also occurred in cases where there was no irritation in the intestinal canal; as, for instance, erysipelas, pneumonia, and other chest affections.

In this way my attention was drawn to the effects of the medicine; and I have now little or no doubt that very great caution should be used when ordering it in fevers, more particularly those of the typhoid type. My own conviction on this point is so strong that I would not give it at all; and the effects of the medicine on the blood, as shown in Dr Richardson's very able work, go far to confirm the opinion advanced.

Farther than what has been already done, it would be entirely foreign to my present purpose to enter on the treatment of fever. I would only remark, that when the disease presents the typhoid type, I do not hesitate to treat the symptoms as they arise. If there be pain in the right iliac fossa, a few leeches are directed—care being taken they do not bleed too long. If these be not required, a blister is applied, and after it a warm poultice; nor have I the slightest doubt in my mind, that, used with common prudence, these measures are most beneficial. The internal medicine which I now use, by much the most frequently, is the dilute sulphuric acid. It appears to me to be far superior to any others in common use; and I have tried largely lead, gallic acid, opium, etc. But I have not used the phosphoric acid so strongly recommended by Huss. The mixture I myself am in the habit of ordering has from one to three drachms of dilute sulphuric acid in the eight ounces, with from two to five drops of laudanum in each ounce. Of this an ounce is given at intervals proportioned to the urgency of the case. One remark is, however, to be made of this medicine. It may act too powerfully—I mean as an astringent; for I am sure that a gradual lessening of the diarrhœa is much the best plan to pursue, and that if it be suddenly checked, mischief will be very apt to follow in the chest or head. If this caution, then, be only kept in view, I repeat that this acid has, in my hands, proved the most useful means of treating the diarrhœa of typhoid fever.

In this particular fever there still remains one point of treatment to notice. Cases like those just spoken of occur naturally; that is, without any means used to check the diarrhœa, it will suddenly cease, and the chest or brain become engaged, often very seriously; and then again, when the chest symptoms moderate, those of the abdomen recur. All such are, in my experience, most critical cases, and too often fatal; and latterly, I have been in the habit of adopting the expedient of keeping a blistered surface open for some days. This was commonly done on the chest, and, as I believe, with very beneficial results. It seemed to have the effect of ridding the system of the poison; for, in the course of two or three days, all went on smoothly. The idea is probably worthy of being kept in mind.

In concluding, I trust the Society will understand that the remarks on the treatment of typhoid fever are, in the strictest sense of the term, cursory, not being intended in any way to give a full sketch of the subject. They are, in truth, "disjecta membra;" but they appeared to myself of sufficient interest and moment to entitle them to this passing notice. These points, you will recollect, are, —the discrimination necessary to be used in the choice of stimulants; the doubtful character of the effects of carbonate of ammonia; the use of dilute sulphuric acid in the diarrhœa of typhoid fever; and the keeping a blistered surface open in certain cases of the same fever.

ARTICLE III.—*Notes on the Surgery of the Indian Campaign of 1857–58.* By JOHN BROWN, M.D., Assistant-Surgeon, Bengal Medical Service.[1]

I PURPOSE, in the following pages, to describe the most important features in the surgical cases which came under my notice during the late memorable Indian campaign. These observations extend over a period of fifteen months, from June 1857 to October 1858.

It appears to me, that, before entering into the purely surgical part of my paper, I ought, in some measure at least, to describe the individuals in whom the injuries occurred, and the varying circumstances under which they took place, as this is necessary to a proper understanding of the results observed at different times and places.

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[1] This paper, given in by the author as his Thesis, gained one of the gold medals awarded by the Medical Faculty of the University of Edinburgh, at the Graduation in 1859.

The greater part of these injuries occurred among the sepoys and others belonging to the Seikh Regiment of Ferozepore, which, as a regiment (although containing not a few men of middle age), was in as fine a state of efficiency as any one that ever took the field; and its powers of endurance were so great, that, beyond the injuries incidental to warfare, and an outbreak of epidemic cholera, there was almost no sickness. Only one case of sunstroke occurred; and this was at Allahabad, after the mutiny, and before we commenced the fearful marches for the relief of Cawnpore.

The Seikhs are a taller, more muscular and wiry race than the Hindustanees. Their religion is a very liberal Hinduism, which permits them to eat and drink more freely than their co-religionists of Hindustan. The flesh of goats and sheep is used when they can afford it, as well as the common fowl, a bird interdicted by the Hindoo Shastres of Lower India. Some drink intoxicating liquors; but it must be confessed that, in a disciplined regiment, cases of intoxication are exceedingly rare.

Their diseases, as one might expect from their habits, partake more of the sthenic character than those of the Hindustanee.

By an article of their faith, they are, curiously enough, debarred from the use of tobacco in any form, and he who does use it is excommunicated, and is no longer a Seikh; but I regret to say, that for this custom is substituted the eating of opium,—a practice which appears to me, after having seen it on a large scale, to be more injurious than tobacco smoking, giving a tendency to dyspepsia and colic, and, in inveterate opium eaters, to debility and emaciation; and although I am, upon the whole, inclined to think that the habitual use of opium may lessen the tendency to inflammatory diseases, it appears to increase the frequency of neuralgic disorders, and to lessen the power of recovery from diseases and injuries, as well as seriously to interfere with the reparative processes of nature. In fact, the continuous use of opium in excess, like that of alcohol, seems to produce emaciation, although it seems pretty clear that both, in moderate doses, prevent waste of tissue, like tea, coffee, etc., and probably tobacco; and it is curious, as showing the almost universal tendency of semi or entirely civilised communities to use one or other of these articles, that the Seikhs, while abjuring tobacco, are slaves to opium.

This habit of opium eating, I may further add, when suddenly stopped, seems to increase the mortality after injuries; and to this cause I in some measure attribute the large mortality among the Seikhs at Lucknow, for there opium could scarcely be obtained by them at all.

Of the Hindustanees I have little to say, as their number was comparatively small. With one or two exceptions, they belonged to a labouring class, and most of them had been suffering privations similar to the others.

During the long period to which my remarks will refer, the toils, privations, and struggles which the regiment underwent were very great. It was employed at the mutiny of Allahabad; took part in every engagement with Sir H. Havelock; assisted at the rescue of the garrison of Lucknow, and in the subsequent two months' defence, where it defended an important outpost; was present during the arduous four months' defence of the Alumbaugh, under Sir J. Outram, and at the final taking of Lucknow, where, with a few Europeans, it stormed and took the Kaiserbagh, or principal palace; and, lastly, had a slight share in the hot weather campaign of 1858. This period embraces a time when all the influences which impair health and produce disease were rife; yet to the continuous excitement of a winning cause must be attributed the small number of attacks from disease, with the exception of epidemic cholera, which destroyed not a few.

At Allahabad, in June 1857, the work was of the most trying description. Supplies were scarce, and the overworked men were crowded in tents. To this, and the presence of the cholera poison in great intensity, must be attributed the many attacks of cholera in the regiment at the time; but when, on the 30th June 1857, we commenced to march, with Major Renaud's advanced column, towards Cawnpore, although the men were exhausted, footsore, weary, and often wet, cholera entirely left us; and during the glorious struggles under Havelock which ensued, and which ended in our retaking Cawnpore, excluding wounds, scarcely a case of disease occurred to attend to; while, on arriving at Cawnpore, cholera again attacked us—again, with one slight exceptional case, leaving us on our first entry into Oude.

Our first campaign in Oude, without tents in the rainy season, I need scarcely allude to, as its perhaps unparalleled hardships are generally known; but here again very few cases of sickness occurred in our regiment, and the wounds had generally a healthy character, while the Europeans were literally melting away under cholera and sunstroke.

Sad, dispirited, and weary were we all when a retrograde movement to Cawnpore became necessary; and no sooner did we arrive there than cholera fell upon our devoted band with renewed force. In a few days our skeleton, plague-stricken force had to march to Bithoor, and gained a signal victory over the overwhelming hordes collected there. In returning next day to Cawnpore, we rested midway in a tope of trees during the heat of the day; and at short intervals the melancholy pibroch of the 78th Highlanders was heard as our brave fellows were thrown into the hastily dug graves prepared for them. On our return to Cawnpore, the force encamped on an open plain, but it became so flooded that the troops were housed in the old cavalry stables. The cholera was still raging with redoubled fury among Europeans and Seikhs, six officers of our small force dying in 48 hours; and people, more truthful than desponding, asserted that, without reinforcements, our devoted band would soon have its "last man."

Here, again, I would draw attention to the remarkable influence of change from a place where cholera is raging, in diminishing the attacks. At the time I speak of, my regiment was suffering most severely from cholera, when we were ordered to escort the sick and wounded to near Allahabad,—an arduous task, requiring forced marches, during the night, of from 20 to 24 miles; but we lost the pestilence, for one, or at most two cases, occurred after we left Cawnpore, and it entirely ceased on our road back to our camp. I forbear speculating on the cause of this interesting fact in the natural history of cholera, as it is foreign to the scope and object of this paper, and now proceed to conclude my short introductory narrative.

Our second campaign in Oude commenced on the 17th September 1857, and terminated on the 25th of the same month in our forced entry into Lucknow, under Havelock. From this time may be dated the untoward results attendant upon wounds, in the case both of Europeans and natives, imprisoned for the next two months in Lucknow. Overworked and cooped up as every one was, with the depressing influences of scanty diet, extreme danger, and incessant anxiety, such results are not to be wondered at; while our hospitals, I fear, were so poisoned by the number of wounded who had been in them, that the materials which produce sloughing, sloughing phagadæna, etc., in individuals predisposed, were rife enough. As there is some scepticism on the point of our having been under-fed in Lucknow, and as it strictly bears upon my subject, I have noted below what our diet, with the exception of a few days at our entrance and on our retreat from Lucknow, consisted of, viz. :—

1st. Europeans,—	Daily.
Beef (bones included),	12 oz.
Wheat,	14 oz.
Rice,	1¼ oz.
Salt,	¼ oz.
2d. Native fighting men,—	
Wheat,	18½ oz.
Dall (a kind of lentil),	2 oz.
Ghee (clarified butter),	½ oz.
Salt,	¼ oz.
3d. Native followers,—	
Wheat,	12 oz.
Gram (a kind of pulse),	1 oz.
Salt,	⅛ oz.

Thus, it will be seen that our food was not of the choicest description, or even plentiful. The coarse flour was baked into cakes; but so coarse was it that diarrhœa, from the mechanical irritation of the particles, ensued a short time after it was eaten. Tea could be occasionally obtained at an exorbitant price, but sugar was generally not procurable at all. Tobacco was only possessed by a few, and the European soldiers smoked tea leaves, and the leaves of the Guada; spirits there were none; but it must be said that among the Europeans little actual sickness occurred during the time of enforced abstinence, although, when we were relieved from our imprisonment, every one felt that he was, in point of strength and physical vigour, different from what he had been on entering Lucknow.

And now I proceed to offer such remarks as my experience of casualties in my own regiment, and while in charge of the Native Camp Hospital at Alumbaugh, will enable me to offer.

I find that I have had 205 casualties to attend to; but this number excludes, I fear, some of my earlier cases, for many of my notes and memoranda were seized by the rebels in Lucknow. Only five of the cases were Europeans, about twenty were Hindustanees, and the rest were Seikhs. Having been occasionally obliged to transfer my cases, and my notes, as above mentioned, being imperfect, I forbear from trying to give the absolute mortality, preferring to state separately the results of each serious form of injury.

Before entering Lucknow, the wounds presented no special complications. After our entry the case was very different. Other diseases, formerly practically unknown, as sloughing, sloughing phagadæna, gangrene, tetanus, and secondary hæmorrhage, made their appearance, and deaths from apparent exhaustion were comparatively common; yet it must be added, that the wounds inflicted during our forced entry into Lucknow were far more serious in their degree, as compared to the numbers wounded, than any I had before seen in our former engagements with the enemy.

1. *Of the Treatment of Gunshot Wounds.*—In a country where animal life is so abundant, and where the materials for its nourishment are so quickly formed by the decomposition of secretions and excretions from the living body, it must be obvious that the surgeon has no few difficulties to contend against in the maintenance of cleanliness among the wounded. Often, with all his care, in the suppurative stage of a gunshot wound, maggots will infest the sore; and these, in addition to causing great anxiety to the patient, frequently change the character of the wound, and cause great pain and constitutional disturbance. When such a complication occurs, the best treatment is carefully to pick out the worms with a pair of forceps; to have the wound frequently washed in such a manner that the water shall enter the wound in a stream, so as to remove as much of the pus and debris as possible; and to dress the wound with lint soaked in turpentine or in camphor water. The latter remedy I had to adopt, in consequence of the want of turpentine. Here I may be allowed to enter a protest against the indiscriminate use of oiled silk or gutta-percha cloth in the treatment of gunshot

wounds,—appliances useful at certain times, but not *throughout* the progress of these injuries. I need scarcely state that gunshot wounds are different in many respects from the injuries of civil life, in so far as they are the results of a foreign body passing with a given force through the tissues. Wounds, however, inflicted by cannon balls and shell, are very analogous to certain injuries met with in civil life, which cause great destruction to the soft parts and open wounds. Although the tearing process of a machine, and the pressure exerted in railway accidents, make certain differences, yet I imagine that the principal difference in these cases will be found to be in the relative frequency and intensity of shock. In the one case, an individual not particularly excited sees an impending danger, and is conscious for some time of its approach; in the other, there is generally a high state of excitement, disregard of danger, sudden injury without previous knowledge of its approach, and little pain in its infliction. I shall, however, consider this question under Shock of Injury, in a subsequent part of this paper.

Cases have been recorded in which gunshot wounds, particularly in the dark races, have healed by the first intention;[1] but when the ball *perforates* a limb, or the deeper tissues, such a result must be very rare. In one case, a flesh wound of the upper arm, I thought such an event likely, the wound closing up; it, however, re-opened and suppurated, like many of our cases of amputation, which seemed to be healing by the first intention, but afterwards opened out and suppurated.

It may be stated as a general rule, to which there is scarcely an exception, that, in a perforating gunshot wound (by far the most common form of gunshot wound in my experience), you have a large tract suppurating and sloughing, with one opening, generally from its position the lower, for the exit of the debris. Now, if on this opening a piece of lint and oiled silk be placed, the cavity is distended, and converted into an abscess. Instead of this, in the suppurative stage very thin lint or porous cloth should be placed over the wound, to permit of the early exit of the pernicious discharge. To facilitate this, I used, when necessary, two dressings a-day; and, by means of the nozzle of a native utensil, like our teapot, or the skin of the water-carrier, a stream of water is poured on and into the wound, cleaning out all the debris. This treatment was attended with the greatest benefit. Sometimes the stream would penetrate, and run out at the smaller aperture of entrance.

This treatment, so suitable when the dead parts were being separated from the living, was just as unsuitable in the stage of healing, when the discharge of pus is just of such a quantity as to protect the surface of the sore; and besides, though by the microscope it can only be termed pus, it is a pus which need not be feared to contaminate the tissues. In this stage, then, we need our oiled silk, or gutta-percha and lint, with plain water, which, in my experience, scarcely ever required to be medicated.

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[1] Macleod, *Surgery Crimean War*, p. 107–8.

2. *Sloughing Phagadæna.* — This horrible disease commenced shortly after our entering Lucknow, and in two of my own cases at least was the cause of death. The tendency of almost every wound, however simple (and the simplest wounds were often the worst), was to take on either this action, or the milder one of sloughing; and this was observed in Europeans as well as natives.[1] There can be little doubt that in the Native Hospital, and probably in other parts of the Residency, the inevitable crowding of the patients into a small space produced the disease in many of the wounded, who in their turn acted as foci of contagion to others subsequently admitted. In a word, the place gave it to individuals, enfeebled by previous hardships and privations, and now overworked and insufficiently fed; and amongst my own regiment, I am sure, the want of their accustomed opium may have made them more susceptible, although, as I have already stated, I believe that the habitual use of the drug retards the healthy healing process.

Seeing the almost inevitable tendency of wounds to take on this action in our overcrowded hospital, I removed as many of the cases as I could to a small convalescent hospital I established in our outpost, and always with the best effect; but as our outpost had been already once cut off from the garrison and surrounded by the enemy, and as the frequent explosion of mines rendered our position one of great peril, I could only keep such cases as might on an emergency have been able to accompany us in our retreat on foot.

Treatment.—As far as my scanty means would permit of, the constitutional treatment was of a stimulating and nourishing character; but beyond a little extra rice and a little rum, I had nothing to give in addition to the garrison fare.

The local treatment was somewhat peculiar, and consisted of a mixture of two methods. The one consisted in the destruction of the surface of the sore and its edges by nitric acid; and the other consisted of irrigation by water, a plan brought into notice by my friend, Dr Sutherland of Patna, and which he found successful in several cases, he having used nothing but water.[2] I think I have had one case which recovered under the latter treatment alone; but I have found the combination above noted more successful than *either* used singly. After touching both the sore and the edges with nitric acid, a dry piece of lint was applied; and, some hours thereafter, a stream of water was directed upon the sore, till the cellular tissue could frequently be seen hanging like silky threads in the wound. This irrigation was continued three or four times a-day, according to the nature of the case; and in the interim the part was covered with moist charcoal, enclosed in a layer of cloth. This might or might not affect the sore beneficially, but it kept down the effluvia, and, from its deodorizing properties, diminished the chances of infection.

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[1] I am aware of at least three cases occurring among European officers after slight wounds, one of which proved fatal. Lieutenant-Colonel S., Madras Fusiliers, sustained a contusion, from a spent musket-ball, over the stomach, which scarcely, if at all, raised the skin; sloughing phagadæna came on, and he died. Lieutenant-Colonel T., staff, had a slight wound of the back, which took on this action, and nearly cost him his life. Captain P., H.M. 90th Light Infantry, had a small wound on the front of the thigh, which took on this action; and I also think Assistant-Surgeon M'M., of the 78th, had it too, after a small wound of the back.

[2] *Indian Annals, Medical Science*, No. 8, p. 470.

With reference to the object and aim of the treatment adverted to, I think it is generally admitted that the poison of sloughing phagadæna, like that of erysipelas and puerperal peritonitis, is of the most powerful kind, and acts virulently even in states of extreme dilution. I am also inclined to think that this powerful poison, lying upon a part, can, after its first formation, keep itself alive by subverting the nutrient action of the tissues, just as cancer seems to do; and that the benefit of the irrigation treatment principally consists in the speedy removal and the *complete* removal, at short intervals, of this pernicious discharge. I can only say, that the more cases I have treated in this way, the firmer is my belief in its efficacy. The nitric acid may only be applied once, or a reapplication may be necessary.

As already stated, two cases proved fatal in my own practice from this disease. Both were men of 50, or above. In the one, the case was originally a non-perforating wound of the hip, which took on phagadænic action, and rapidly extended, and was accompanied with extreme debility and diarrhœa; the wound took on healthy action for a short time, but sloughing again came on, and the man died of exhaustion. The other case was rather one of sloughing, than of sloughing phagadæna.

Jeyt Singh, æt. 50, sepahi, was injured on the 26th September by some splinters of wood, and a large one entered his neck above the right clavicle, near its sternal end.[1] The wound, which was not very large, was afterwards enlarged, and a piece of wood extracted, about one inch square, and situated rather deeply in the neck. The wound enlarged, and discharged freely; but, nine days after the injury, severe hæmorrhage came on, apparently venous. The wound was plugged, the hæmorrhage ceased, and the wound seemed to be granulating (several splinters of wood, deep in the wound, were extracted before it was plugged). Slight hæmorrhage recurred once; but, three days after, profuse arterial hæmorrhage came on. To reach the bleeding point, part of the clavicular portion of the sterno-mastoid had to be cut; and deep in the wound an artery was tied, which seemed, from its position, to be the transversalis colli, or the posterior scapular. No further hæmorrhage took place, but the man died two days after.

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[1] The circumstances under which this occurred may be worth briefly mentioning:—After Havelock's force had entered Lucknow on the 25th September 1857, some of the force had to go out the next day to protect the bringing in of the heavy guns. My regiment was ordered out also. At first the enemy had probably not perceived us; but latterly, as we hurried along, they poured a heavy fire upon us. The rendezvous was a house on the river's bank, and we had to plunge through a stream up to the waist. One man was mortally wounded and one killed here; and, just as we scrambled into the house, two of our brave fellows had each a leg left dangling by a piece of skin. Inside, all was confusion; a 32-pounder shot struck every few minutes against the wooden beams of the house, and each splinter of wood formed a dangerous projectile, knocking down men here and there. We escaped early next morning, after an anxious night.

I now proceed to say a few words regarding tetanus.

3. *Tetanus.*—No cases of this complication occurred in my regiment until we entered Lucknow. Among Europeans and natives it was very prevalent there. In my practice six cases occurred; one was a European officer, the rest were Seikhs. In the European officer the tetanus came on after he had passed from my care, and, as far as I recollect, twelve days after the injury, and while the wound was granulating. The injury was a compound fracture of the humerus, near the elbow, but apparently not implicating the joint. Several pieces of bone were removed, along with pieces of the coat-sleeve. He was with me in a newly-occupied post, and orders having been given that all the sick and wounded should be removed from it, he had to go with the rest, in a state of great nervous depression, to the entrenchment, where tetanus speedily ensued, and proved fatal very quickly.

Of the other cases, three occurred while we were besieged in Lucknow.

In one case, a compound fracture of the fibula, tetanus supervened while the wound was sloughing. In the second case, perforating gunshot wounds of the shoulder and leg existed; the wounds which had formerly been sloughing were healing, when tetanus supervened, and proved fatal. In the third case, a bad compound fracture of both bones of the leg, amputation was frequently urged, but as frequently refused by the man and his relatives. Twenty-six days after the injury, the bones were still without an attempt at union, and slight stiffness of the jaws and difficulty in swallowing solid food were observed. These symptoms continued; and, two days after, I have noted that the granulations of the wound were beginning to slough, and the foot to sphacelate. Amputation was again urged, as a last resource, and agreed to. The limb was amputated below the knee; the tetanic symptoms seemed much relieved; but the man, always of a feeble constitution, died of exhaustion three days after the operation.

The fifth case occurred after the final taking of Lucknow, and while the regiment was quartered in a large building in the suburbs (La Martinière). The individual had newly rejoined the regiment, and had not shared in its privations. Some of the sepahis were throwing a large shell, supposed to be empty, when it exploded, and injured this drummer boy, æt. 20, in the arm. On examination, the right arm was found to be injured; there was a wound of about two inches in length over the radius, and another over the ulna, which bone was fractured at the wrist. Two days after the injury, severe inflammation came on, requiring free incisions; and several pieces of bone were extracted. Seven days after, the wound is noted as beginning to granulate; on the eighth day symptoms of tetanus came on; and the patient died five days after, the sore looking flabby, and as if about to slough. In this case the symptoms were so severe, and the exhaustion so great, that amputation was not thought expedient.

In the sixth case, which was transferred to the Field Hospital at the final taking of Lucknow, and was again brought under my care a day before the fatal termination, tetanus supervened on a sloughing gunshot wound of the foot, and proved fatal nine days after the receipt of the injury. The date on which tetanus supervened I cannot state; the man's age was 40 years.

In India, tetanus is much more common than in more temperate climates; and I have little doubt that, were the statistics of this campaign made out, tetanus would be found to have caused a great mortality. Even in my own cases—205, but probably a little more—6 cases of tetanus occurred; while in the whole Crimean campaign, 29 cases only occurred,—5 at Scutari, 24 in the Crimea, and 1 in England,—or 0·2 per cent. of the wounded.[1] The probable exciting cause in our cases was extremes of temperature, as during October and November, when most cases occurred, the days were warm and the nights generally cold, while our clothing was very scanty.

With reference to the cases above noted, I may draw attention to the fact, that in three cases the wounds were sloughing, and in three healing.

Treatment.—As may be supposed, I have little to say with regard to this. The medicines most frequently used were Cannabis Indica and Opium; and when difficulty of swallowing was a prominent symptom, the medicines, when practicable, were administered by the rectum, along with nutritive enemata. But it appears to me that our medical treatment of this disease is nearly inert, and sometimes more than that, perhaps hurtful, especially when medicines are given by the mouth; but the method by the rectum causes less spasm. To increase our scepticism of the influence of remedies in this disease, we find that in most cases in which individuals have recovered under the favourite medicines, the attack has been of a chronic character; and, bearing in mind that tetanus is generally fatal before the twelfth day, we must be cautious in attributing the favourable result to our remedies.

It appears to me, from all I have seen of the disease, that by adopting the suggestion of Marshall Hall, and performing tracheotomy, we would at least get rid of, I believe, one of the most distressing features of the disease, and one which causes the most mischief—the spasm of the glottis[1]—and the sense of impending suffocation; while the distressing efforts to swallow might in great part be avoided by the giving of nutritive enemata in small quantities. The large doses of medicines given, and the fact of solid opium having been found undigested in the stomach after death in cases of tetanus, would lead us to believe that little absorption of remedies goes on in the stomach. The frequent use of purgatives, when there is little to be removed except what has been secreted as the result of their irritating effects, seems also a part of the treatment which might be with benefit modified; for all admit the effect of irritating substances in the alimentary canal in producing convulsive diseases. Probably the most successful treatment of this disease would be by pulmonary inhalation of medicines; and although chloroform inhalation only alleviates the paroxysms of the disease, as I have seen in my own practice in Scotland, yet belladonna, Cannabis Indica, or opium, might prove beneficial if thus administered. If they did not, we might be sure of one thing, that their failure was not caused by deficient absorption, and we could thus estimate their value more clearly.

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[1] *Blue Book: Medical and Surgical History of the Campaign*, vol. ii., p. 279.

One conclusion which I have come to is, that the frequent swallowing of medicines is a powerful excitant of the spasms, while I am inclined to suppose that frequent purging is a doubtful remedy, if we consider the intimate connection between the intestines and the spinal cord. These remarks are advanced with great diffidence; but in a disease which, under our present treatment, I consider to be necessarily fatal in its acute form, they may be deemed permissible.

4. *Shock.*—This complex condition, difficult to be described, although easily recognised, is often a product of causes not necessarily produced by the injury; and I have thought proper to give an abstract of the most recent view on the subject, in many respects an admirable one, which appears in the *Medical and Surgical History of the Crimea* (Blue Book), vol. ii., p. 265–6:—"Among the first effects of a gunshot wound is what has been denominated shock. This word is in general use among surgeons, to denote a certain state of the system immediately consequent upon injuries, and it follows all severe injuries in a greater or less degree; but it may be fairly questioned whether, under this generic head, many, and perhaps essentially different, states have not been included. An amount of shock, and generally a very marked one, follows perforation into the abdominal cavity, by ulcer of the intestines; but although the symptoms are similar, it by no means follows that the effect upon

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[1] It may be doubted whether this occurs. I think in the spasm it probably does. In a recent case of hydrophobia, tracheotomy was performed with success (and hydrophobia is a very similar disease), by Mr Scriven, at Calcutta.

the vital processes is the same as that consequent on the sudden and unforeseen crushing of a limb. Powerful mutual impressions, again, produce shock, but this is probably of a different nature from the former. Leaving this subject, however, where we find it, and using the word in the acceptation usually given to it by surgeons, the shock of the accident differs often in a very material degree, and possibly in kind also, from that witnessed in civil life. When a cannon shot strikes a limb and carries it away, the immense velocity and momentum of the impinging force can scarcely be supposed to have no physical effect upon the neighbouring or even distant parts, independent of, and in addition to, the 'shock,' in the ordinary acceptation of the term, which would result from the removal of the same part by the knife of the surgeon, or the crushing of it by a heavy stone or the wheel of a railway waggon. The vitality of the parts more immediately struck is destroyed, as in any ordinary crushing of a limb; but, in addition, bones are often split for long distances above the point of immediate contact, and nerves violently stretched or otherwise injured. The vessels appear to escape best; for there is rarely much bleeding, or for more than a few seconds' duration. In the great majority of cases the whole frame is likewise violently shaken or contused, and, probably, independently of these physical effects. A further vital influence is exerted, which exists in a very minor degree, if at all, in the last named injuries, and may possibly depend upon the ganglianic nervous system.

"The shock, again, in men wounded in action often differs from that state to which the term is usually applied in civil life, in the mental condition of the patient at the time of the injury. There is an amount of mental strain more felt by some than by others, but to the existence of which any one who has been under heavy fire can testify, if he has taken the trouble to analyze his feelings. In very old soldiers, and in much of the trench work, this condition perhaps only existed in a minor degree; but there is a state of apprehension, expectancy, or high nervous tension, common, more or less, to all men when they find themselves face to face with an armed enemy. Some hope to attain the object they are striving for, some fear personal injury, but the bravest cannot remain long under fire without being more or less affected; and whether he becomes excited or apprehensive matters little, so far as the effect on the nervous system is concerned. The strain in both cases leads to subsequent exhaustion; and, in the event of a severe wound being inflicted, this exhaustion is an important element in the shock induced. . . .

"Men were occasionally received for treatment, in whom the state of nervous tension alluded to had not subsided; and they seemed to bear operations either with or without chloroform, and indeed, in some instances, begged that it might not be given. . . . In these cases the immediate effect of the injury (or shock, as ordinarily understood) existed; and yet its effects were counterbalanced, and its symptoms in great measure held in abeyance, by the mental condition. . . . It often happened, however, that there was considerable delay before men could be removed from under the enemy's guns; and the state of nervous tension was then found to have subsided, and to have been replaced by the state of shock. . . .

"Shortly to recapitulate, the 'shock,' as usually coming under the cognizance of a military surgeon, is of a compound nature, in the composition of which the following elements may often be recognised:—

"1*st.* The vital effects following all severe injuries.

"2*d.* The mechanical effects, probably many and various, of the peculiar velocity and momentum of the impinging force, especially in reference to cannon-shot injuries.

"3*d.* Probably additional vital effects of the above mentioned velocity and momentum.

"4*th.* Nervous depression, consequent on previous high nervous tension.

"5*th.* Loss of blood to a considerable extent, sometimes by a large quantity suddenly effused, sometimes by a longer process of gradual drain."

Before saying anything of my own experience of cases of shock, or of the convictions forced upon me in this campaign, I will further quote a passage from an author, who, writing upwards of forty years ago, has yet, in a few words, described most accurately the condition frequently found in individuals wounded during the excitement of a warlike struggle. My object is to show that shock in warfare is not at first developed if the struggle be an exciting one, but that it is a secondary complication, occurring in cases in which operative measures may afford a prospect of recovery. "All our amputations were performed without waiting for reaction; and it may be necessary to observe that, though many of the men were carried down with their limbs torn from them, others with the most severe lacerations and fractures, and one young officer, in particular, with the spine of the ilium and all the anterior abdominal muscles torn away, exposing the contents of the abdomen, yet in no instance could we perceive the dreadful perturbation and constitutional shock so frequently described by authors on gunshot wounds, until some time after the injury had been received; and I have every reason to conceive that amputation, having so promptly followed the wound, was the only effectual means of saving many from its baneful influence, even under the unfavourable circumstances in which we were placed."[1]

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[1] *Medico-Chir. Trans.*, vol. viii., 1817. Statement of the Wounded on Board his Majesty's Ship Leander in the Action before Algiers, by D. Quarrier. I may state that I owe a knowledge of these extracts to Professor Syme, who, in a late clinical lecture, brought them before his class in some remarks he made with reference to the shock of injury in civil life; and the conclusions he arrived at were, that if in these injuries amputation be required, and the shock do not subside, chloroform should be given, and amputation performed, as this treatment affords a chance of success, while leaving the patient alone will in most cases necessarily prove fatal.

After the extracts I have given, it may be supposed that enough has been said with regard to this question; but I will at least venture on a few remarks, as I believe we have, as a general rule in this campaign, seen our patients under fire, and as soon as they were wounded. I would begin by excluding those cases which, as a general rule, are necessarily fatal, as wounds of the lung, intestine, etc., for to them the term shock is, in practical language, inapplicable; as the state which immediately ensues is part of the death-agony, and has one termination—death. In other instances death may occur, but reaction is the event we hope for; such injuries being principally those of the extremities. From shock I would likewise exclude those cases often confounded with it, in which hæmorrhage and its usual immediate results are grouped under this convenient generic term. There is another class of cases which might perhaps be also excluded, in which the individual dies after a slight wound, sometimes owing to a peculiar idiosyncrasy, at other times owing to visceral disease, but in which the severity of the wound bears no relation to the effect produced. But, while thus limiting the term, my remarks will have more reference to a state which precedes shock than to that state itself; and I purpose now to say a few words on the differences which occur in the after effects of injuries in civil and military life. While house-surgeon to the Leith Hospital for nearly two years, I had ample opportunities of seeing the effects of injuries immediately after their infliction; and the impression conveyed to my mind was, that shock was an immediate result of the injury sustained, from which the individual might or might not recover; and, indeed, when we consider the usual character of these injuries, but more particularly the agony of mind which must occur previous to the infliction of a foreseen danger, and the fearful pain which ensues, as in machinery accidents, as well as the time occupied during the infliction of the injury, which even in railway accidents is greater than in casualties received in warfare, we find enough to cause this state. But we shall also find another influence in the rapid succession of depressing ideas, always vivid and extremely rapid and precise, which flit across the minds of the class usually injured. Want, if he survive, a maimed and useless individual; or, worse still, death, and the consequences of either to his wife and children,—these are, I fear, often felt in injuries rapid enough in their infliction, and are still more appreciated if the injury permit of after thought. I believe, then, that shock, limiting it, as I have done, to injuries not necessarily fatal from irreparable injury to vital organs, is immediate in civil life; and that in such cases a reasonable delay for a short period, if symptoms of amendment are visible, should be granted before operating, but that in cases necessarily fatal, without operation, a chance should be given by operating.

In the injuries incidental to military warfare there is a wide difference in many respects, both in their physical and psychical aspects.

In the soldier there is always more or less excitement, varying with the nature of his duty,—a state which banishes the fear of danger, unless in those for the first time under fire. If he is wounded, unless in a vital organ, he is scarcely conscious of it, and looks with a degree of astonishment at his wound; while in not a few there mingles with this a degree of pride at being wounded, and he feels that his country will provide for him.[1] But, in a variable period, varying much according to the nature of the injury and the previous excitement, but probably never exceeding half an hour, the shock comes on. Of course there are exceptional cases, and these are generally cases of slight wounds, in which the individual, to use a popular expression, "is more frightened than hurt." The cause of the difference of opinion with regard to this question, which formerly existed between surgeons in the army and navy, was doubtless the period of time which had elapsed before the wounded were seen after the receipt of their injuries, in the two services. Dr Quarrier's statement of his experience upon this point, already quoted, is explicit enough; while we find Guthrie, in his *Commentaries*, page 34, stating that "a surgeon on the field of battle can rarely have a patient brought to him, requiring amputation, under less time than from a quarter to half an hour; a surgeon in a ship may see his patient in less than five minutes after the receipt of the injury; and to the surgeons of the navy we must hereafter defer for their testimony as to the absence or presence of the constitutional alarm or shock to which I have alluded, and to what degree they follow immediately after the receipt of such injury." The order given during the Crimean campaign, that one medical officer should always be with his regiment under fire, has, doubtless, done much to show that injuries on the field or the deck, if seen early, are similar in their effects; for, instead of half an hour elapsing, medical officers now see their wounded as soon as the injury has been inflicted. The Crimean reports, although most likely compiled from the reports of surgeons who received their wounded after they had been attended to in the trenches by their assistant-surgeons, still allude to cases in which shock had not been established, or, as it is termed, the state of nervous tension had not subsided.[2]

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[1] I know of one distinguished officer who had been in Affghanistan, the Punjaub campaign, etc., who told me, when wounded, that he had often wished to be wounded. It is, I believe, not an uncommon feeling in those who have seen much service.

[2] In the Indian campaign, especially at its first commencement, to lag behind was often equivalent to death, as the hordes of rebel cavalry often closed on our rear; and I daresay most of our surgeons can tell of dangers escaped from while detained rather long by some severe case. One assistant-surgeon was always alongside of the regiment, sometimes two; while the surgeon followed closely at no great distance. In native regiments with one surgeon, he was, of course, always under fire in action; and by this is meant that he was at a distance of 15 or 20 yards in rear of his regiment. The medical service, considering its numbers, suffered pretty severely in this campaign; including those massacred,

It is scarcely worth while, after what has been said, to state my opinion, that, if operative measures are necessary, the sooner the knife follows the wound the better; less hæmorrhage will be also incurred; and should chloroform unfortunately not be at hand, the operation will be scarcely felt at all. In Lucknow, when I had to operate without chloroform, I have performed double amputation immediately after the injury. In the case alluded to, the individual, a strong, robust Seikh, had been injured by the explosion of a mine, and several ribs on the right side were fractured, making a depression into which the fist might almost be placed. Amputation below the shoulder-joint was performed on one side, and, immediately after, the fore-arm of the other side was amputated; he died of shock the next day. In another case, that of a rebel, I amputated the thigh on one side, and excised the knee-joint on the other side; this man also died the next evening, from shock.

In three cases I have seen well-marked shock soon after injury. One was quite exceptional. The 90th Light Infantry were practising, or at drill, at the Alumbaugh, when a musket belonging to one of them went off accidentally, the Enfield rifle ball going clean through the legs of two men and slightly injuring the hand of a third. In one the shock was so great that no operation could be performed, the individual being almost "in articulo mortis," a good deal of venous hæmorrhage having occurred; in the other, amputation of the leg was performed under chloroform, while the man was in a state of great exhaustion. I administered the chloroform on that occasion; and although the pulse was latterly not perceptible at the wrist, I continued it, as the breathing was good. The man recovered. These two cases illustrate the occurrence of an injury in circumstances somewhat analogous to what occurs in civil life, in this respect, that there was no state of excitement. The third and exceptional case occurred in my own regiment during the storming of the principal palace at Lucknow. The man had a perforating wound of the fleshy part of the leg, which I attended to, and then hurried on. On returning, I found him dying. There was no hæmorrhage, but he died immediately after. The death might have been owing to some organic disease, or the idiosyncrasy of the individual.

I will now close this part of my subject with a few aphorisms, which I believe to be warranted.

1. Shock in military warfare is a state which, except in cases of injury to vital organs, or severe hæmorrhage, does not supervene till some time after the injury.

at least 22 sustained injuries that I am aware of. Four were killed; and of the rest many were severely and some mortally wounded. But let me be understood. The medical officer must always be exposed to risk; but I should like to see it more recognised, that, in the strict exercise of his duties, and with a more keen perception of danger than the military aspirant for glory, he incurs no little danger, and is equally eligible for rewards and honours.

2. In this stage the knife should follow the wound if amputation be necessary, as less hæmorrhage occurs, and no additional shock is produced.

3. If shock be established, and show no sign of amendment, chloroform may be given, and amputation performed with the *chance* of success.

5th. Primary and secondary hæmorrhage.

Of these two conditions I have little to say. In a great many injuries on the field the arteries escape, the veins being perhaps more liable to injury. I have had, in my experience, one case of hæmorrhage on the field, from wound of the femoral vein, so far as I could ascertain, and two cases of severe hæmorrhage from the facial artery, to be afterwards noticed in connection with fracture of the lower jaw. In severe injuries, where the limbs are, so to speak, nearly torn off, the hæmorrhage is not great. In one of these cases, where the thigh was nearly torn off, high up, by a shell, I tied the femoral on the field, but there was really very little hæmorrhage from it. The arm of the other side was nearly torn off; but no arteries were tied, as there was only an oozing. In two other cases I have seen similar results. Both men had their legs dangling below the knee, by the skin almost; and here there was only oozing after I chopped them off with a native sword, for the purpose of applying a bandage. A compression was applied over the site of the femoral, as a precautionary measure. I have seen other severe injuries of the extremities with little hæmorrhage, but in them I have not examined the state of the main artery before amputation.[1]

Perforating wounds are, fortunately, rare, and are attended with serious hæmorrhage; but I have seen one case of the division of the radial, one of wound of the posterior tibial, and another of probably the superficial epigastric, in which interference was required only some time after the injury, in consequence of *attacks* of hæmorrhage. These cases were under Dr Home, of the 90th Light Infantry; but, except in perforating wounds, and wounds in which I believe the bone is fractured, and then cuts the artery, or when the artery is cut, clearly by its proximity to a bone, hæmorrhage to a great extent is not frequently met with.

Secondary Hæmorrhage.—As the result of sloughing, either with or without amputation, this complication was not uncommon in Lucknow. I have already related one case in which the posterior scapular was tied; and other four cases occurred to me. In one of these the hæmorrhage was apparently from the femoral vein, consequent upon sloughing, about three weeks, as far as I recollect, after the original injury—a wound of the vein. At the time of injury there was profuse hæmorrhage, which was controlled by a compress; and from that time there was no bleeding till after the period I have mentioned. There was no further hæmorrhage, the wound becoming more healthy. In the other three, the bleeding occurred after amputation. In the first case violent hæmorrhage occurred after severe inflammation of the hand, consequent upon amputation of a finger; the case did well. In the second case, an amputation below the knee, sloughing ensued; the stump was taken down, and the posterior tibial tied; the man died of exhaustion some time after. In the third case, secondary hæmorrhage occurred after amputation through the ankle; one of the plantars was retied; the man died some time after of exhaustion.

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[1] In the two cases above alluded to, I adopted a plan which a patient of Professor Syme's many years ago adopted. He had a wound of the femoral artery, and he was sent safely from a long distance with a compress over it of halfpenny pieces. In these two cases I used a coin of a similar size, and they did very well.

6. *Wounds of the Head and Face.*—In all, I have had ten cases of importance under this head. Six of these were wounds of the skull, with four deaths; four were fractures of the lower jaw, with two deaths.

Wounds of the Skull.—In the first case, the notes of which were lost, the injury consisted of a gunshot injury behind the ear, a small hole being visible, but no ball was felt and no cerebral symptoms were present, the only thing complained of being pain of the ear. The man was wounded at the retaking of Cawnpore, and lay, on the night following the injury, with the regiment on the late battlefield. On reaching Cawnpore the next day, he only complained of pain. Next day we marched, and he was suddenly seized with restlessness, followed by coma. An incision was made down to the temporal bone, and a ball lying over it extracted. The bone was extensively fractured, the brain ruptured, and quantities of brain substance were escaping. In a few hours he died.

No. 2. In this case, a small part of the external table of the frontal bone, about half an inch square, was driven in by a musket ball, producing a slight depression. This man recovered without a cerebral symptom. The notes of his case were lost; but my impression is, that he was sent to Allahabad some weeks after the injury, in case he might have got worse: the case, therefore, is so far imperfect, that he might have turned ill after he left me.

No. 3. This case occurred in Lucknow. Gunda Singh, æt. 35, sepahi, was wounded on the 31st September 1857, by a musket ball, which struck him on the head, just at the junction of the parietal with the frontal bone, but a little to the right. The bone was exposed to the extent of about an inch. He was seen immediately after the injury, and complained a good deal of pain over the *left* temporal bone, apparently the result of contre-coup, for he had also slight paralysis of the *right* leg, with dragging of the limb and slight loss of sensation (which, however, disappeared greatly in a few hours). Pupils equable, normal; pulse natural.

On the 1st of October I have noted that he was doing well, and the leg improving; wound looking well; no pain of head; slight irritability of stomach. Some days after, fever, with rapid pulse, set in; there were no head symptoms, but irritability of the stomach continued; the exposed bone became dry and dark-coloured; he gradually sank, although remaining sensible, and died exhausted twelve days after the injury. Some operative measures, it may be thought, would have been advisable in this case, as there might have been cerebral abscess; but the man's death was rather unexpected, and the cerebral symptoms at the time were not of a nature, in my mind, to justify trephining, although I believe the man had occasionally some convulsive attacks in my absence, the nature of which I failed to discover.

No. 4. Kuzan Singh, æt. 35, corporal. While this man was on duty at a post in Lucknow, where bricks were frequently thrown over a high wall at us by the rebels, he was struck on the head by a missile which was supposed to be one of them. On examination, he was found to have sustained a severe wound over the left frontal bone, at its upper and posterior part; there was severe hæmorrhage; two arteries were tied; the bone was found to have sustained a comminuted fracture; the pieces were removed, leaving an angular space of about an inch; and the brain was lacerated and protruding. He was insensible; the pupils were equable and semi-dilated; the pulse was slow; there was some vomiting. Four hours after, the ligatures were found to have been forced out by the brain, which protruded and bled considerably; there was no bleeding from the former vessels; he was insensible; breathing was not slower than usual, and was unaccompanied by stertor; the pulse was very slow and feeble; he tossed about the left arm and leg; the right arm and leg, on being handled, were rigid or stiff. Next day he was still insensible; the breathing was stertorous; he tossed about the left arm and leg; the right side had lost its rigidity. He died about 11 A.M.; the protrusion of the brain was then much less than it had been; there had been no hæmorrhage, a dry sponge having been applied over the wound.

No. 5. Nunkoo, æt. 25, syce. This man, when out cutting grass at one side of the entrenchment at Lucknow, on October 29, 1857, was shot through the head by a musket ball, and brought to hospital. It was found that the ball had entered at the temporal ridge of the frontal bone of the right side, and had made its exit at the opposite temporal ridge. The fracture was comminuted. An incision was made over the wound of exit, and three pieces of the frontal bone removed, in all about two inches square; a good deal of lacerated brain escaped from both orifices; he was sensible; the pupils were equable; he moved about a good deal. Next day he was still sensible, but answered questions stupidly; there was venous oozing from the wounds. He died on the third day.

No. 6. Sudeen Shoobie, æt. 40, rebel. This man, while leading on the insurgents at Alumbaugh, on January 16, 1857, was wounded, and brought away for the purpose of eliciting information. He was found to have sustained a gunshot fracture of the femur, through, or immediately below the trochanters,—the ball, supposed to be an Enfield, having lodged. He had a superficial sword-cut of the abdomen; another sword-cut had cut the fleshy part of the chin. There were also two sword-cuts, which had taken out both eyes, and separated a slice of the frontal bone, exposing about a square inch of brain. In consequence of the injury of the head, I did not amputate at the hip-joint, but put the thigh in an easy position, as the case seemed hopeless. Bandages were applied to the thigh and to the head, the chin wound being also approximated; he was perfectly sensible. Two days after, the chin wound seemed to have united; a piece of the frontal bone was loose; the brain beneath was pale; he was sensible. 22d. He was in much the same state; was perfectly sensible, but refused his food, taking only a little milk daily. 23d. Loose bone was dissected out from the scalp wound; he was evidently better; the sword-cut had divided the nasal bones; and water poured into the wound reached the pharynx.

About this time, or probably before, as he seemed to be going to live, the thigh was put up with a long splint. Some days after, he commenced to take his food; and on the 26th March I have noted that the thigh-bone had united. The other wounds healed up, leaving the brain, however, exposed. An autoplastic operation was thought of; but the contemplated march of the regiment obliged me to hand him over to the civil authorities.[1]

This case is one of the most singular I ever met with—perhaps the most singular, considering the nature of the injuries—the most curious fact being, that the thigh united after the ball, supposed to be an Enfield, had fractured the bone and lodged. Only one case had previously occurred in my practice, at all like it, and this was a machinery accident, in which the individual recovered, after compound fracture of the middle third of thigh, simple fracture of the tibia of the opposite side, compound fracture of both bones of the arm, and a bruise of the chest, with pleurisy following. The case occurred in Leith many years ago.

With regard to the cases collectively, there is little to say. Most of them have terminated fatally. In one of them, No. 3, an abscess had perhaps formed, and the application of the trephine might have been of benefit; but the evident symptoms of contre-coup, the want of urgent symptoms of compression, and the rather sudden death, prevented that treatment being adopted which, looking back upon the case as a whole, would almost seem to have been warranted, but which, before death, did not seem to be so.

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[1] This man had formerly been a sepahi in our service; but, as I was informed by an Eurasian woman (who was concealed in Lucknow at the time), he was the spiritual leader of the Hindoos. His caste was that of a Brahmin, and he was said to have L.20 a-day from the Government. At the attack he came on, bravely leading his men, attired as Hunormaun or Mahabeeo—the monkey god, and the god of war. He had on a tail of twisted cane, with a flag attached to it, and a curious cap on his head, and his followers had the mark of Hunormaun between their eyes in red paint. He was very penitent, and I carried him on to the siege of Lucknow, and kept him in our standing camp. At last I gave him over to the civil authorities, hoping they might deal leniently with him, as he had been treated by me with consent of General Outram. They sentenced him to death, but recommended him to mercy; and I afterwards heard that he was allowed to go to his own home; indeed, as a blind man, he could do us no further harm.

Wounds of the Lower Jaw.—There were four cases of this form of injury. No. 1 was a gunshot injury of the jaw on the field, attended with profuse hæmorrhage; the facial artery was tied, and a large portion of the comminuted bone removed. The case did well, and was transferred some weeks after.

No. 2. This was a gunshot wound of the lower jaw at the symphysis. There existed a depression in the bone, the ball not having perforated it. This case did well. It occurred in one of our Hindustanee dooly-bearers at Lucknow.

No. 3. This case also occurred in Lucknow. Wuzeer Singh, æt. 30, sepahi, while upon sentry duty, was shot in the right lower jaw. Seen immediately afterwards, he was found lying in a pool of blood; there was great arterial hæmorrhage; a smaller wound was situated over the angle of the jaw, a larger one over the symphysis; both wounds were laid into one, and the fractured pieces were removed from about an inch from the articulation to the symphysis, leaving a shell of bone; the facial and a smaller branch were tied, and a compress was applied. In the evening there was a slight tinge of blood in the sputa.

On the 4th of November, the third day after the injury, the sutures were removed, and the whole extent of wound had apparently healed, with the exception of the small points of exit and entrance of the ball; he was feverish.

8th. There were signs of dry pleurisy on the lower part of the left side; he was ordered to take $\frac{1}{8}$ gr. antimony every three hours.

On the 10th the wound was doing well; there was slight dulness of the left lower dorsum; respiration was audible, accompanied by friction sound; there was no ægophony.

12th. Pain of chest less; signs as before. The pleuritic symptoms increased, and effusion followed; the wound began to gape, and symptoms of exhaustion came on. A blister was applied, and carb. of ammonia, etc., were given; but he died on the evening of the 13th, eleven days after the injury.

No. 4. Khan Singh, æt. 30, sepahi. This man sustained a gunshot wound at the final taking of Lucknow, on the 16th of March. The ball traversed the mouth, and fractured both lower jaws, near the angles. He was sent to the field hospital, and again admitted into the regimental hospital, sixteen days after the injury. He was very feeble, and could only swallow liquid food. He gradually sank, evidently from pyæmia, and died twenty-one days after the injury.

With regard to these cases, my time will not permit me to do more than simply refer to the two interesting fatal cases; and I would also refer to the extreme and violent hæmorrhage which attended division of the facial artery, in the two cases in which it was wounded,—a circumstance quite peculiar, when contrasted with what occurs after division, by missiles, of arteries in other parts of the body. This, I believe, is owing to the artery being cut, not torn, as in other injuries, and may be owing to its being divided *on* the bone; but it is probably more often owing to the bone being first fractured, and the sharp edge cutting the artery, as with a knife. Certainly the hæmorrhage is most alarming, and in case No. 3 it seemed to have nearly proved fatal, although I saw the patient immediately after the injury, on the spot where he fell.

(*To be continued.*)

ARTICLE IV.—*On the Alteration of Pitch of Cardiac Murmurs by Conduction through the various Media composing the Thoracic Organs and Walls.* By SYDNEY RINGER, late Physician's Assistant at University College Hospital.

IN a paper published in the Proceedings of the Royal Society,[1] I have endeavoured to show that the pitch of sound is altered by conduction. The nature of the alteration varies with the conducting medium. The following is a summary of the conclusions there arrived at by experiment:—

That porous substances, such as wood or bone, lower the pitch in proportion to their porosity. All other solids, such as iron and glass, raise the pitch.

Fluids raise the pitch.

Fluids in motion raise it more than fluids at rest.

Solutions in water raise it more than pure water, and in proportion to the strength of the solution.

Minute particles suspended in water raise it more than either pure water or solutions.

Gases raise the pitch slightly.

The heart's substance lowers the pitch.

Cellular tissue raises it.

All the above altered the pitch in proportion to the amount of the conducting medium listened through.

In the following paper it is intended to explain the alterations in pitch in cardiac murmurs by conduction by the above principles; but as these alterations in pitch have not hitherto been noticed, it is necessary first to state them.

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[1] *Proceedings of the Royal Society*, Jan. 26, 1860.

When a murmur, conducted either through the heart's substance or the sternum, is listened to, the pitch is found to be lower than at the point of production. Thus an apex murmur is found to have its pitch lowered when listened to at either the ensiform cartilage or at the base of the heart; whilst a base murmur is found to be lowered in pitch when listened to at the apex or ensiform cartilage.

Should there, however, be effusion into the pericardium, the very reverse takes place of what is stated above; the pitch being then raised, instead of lowered, at the different points named.

Again, a murmur generated at the base, at either orifice, is found to have its pitch raised at the second cartilage to which the vessel in which the murmur is generated runs; whilst, on the other hand, it is notably lowered at second cartilage on the opposite side. Thus, should it be an aortic murmur that is being listened to, the pitch is found to be heightened at the second right, and lowered at the second left cartilage. Should it be a pulmonary murmur, the reverse is the case.

Any murmur heard through the medium of air-containing lung is found to have its pitch heightened by the conduction.

The cause of the lowering of the pitch when heard through the medium of the sternum, or heart's substance, is explained by the property they possess of lowering pitch by conduction, which has been shown to be the case in the paper I have alluded to.

In effusion into the pericardium, it has been said that the pitch is raised, instead of being lowered, as in the above case. This is due to the property fluids have of raising the pitch, and was well illustrated in the following case:—A patient suffered from extensive effusion into the pericardium; also from a loud mitral regurgitant murmur. The pitch of this was found to be higher at the base and at the ensiform cartilage than at the apex. As the fluid became absorbed, as ascertained by percussion dulness, so did the distance to which the pitch was raised, beyond that again falling. Thus, when the fluid reached as high as the second rib, the pitch was found to be raised to that point; but when it fell to the third rib, the pitch was still found to be raised as high up as this; but, on listening higher still, the pitch fell again. After the fluid was considerably absorbed, the only direction in which the pitch was raised was in passing inwards to the ensiform cartilage (the patient being in the erect posture). On placing the patient in the recumbent posture, and depressing the upper part of the chest, at the same time elevating the lower, thus causing the fluid to gravitate away from the apex and ensiform cartilage, the pitch was found to be lowered in passing to the ensiform cartilage. On restoring the patient to her first position, the pitch again became higher at this point than at the apex.

The elevation of the pitch of a basic murmur at the second cartilage, to which the vessel generating it runs, is also due to the fluid in the vessel. It may be objected that the distance is too short; and also that, as the blood is in motion, the murmur would be carried, and not conducted, by the fluid. The following experiments, however, show that these objections are not valid:—

Into an india-rubber tube, 13 inches long and $\frac{3}{4}$ths of an inch diameter, a funnel was inserted. Immediately below this a small opening was made, just large enough to admit the end of a tuning-fork. Water was kept constantly running through this, and the stethoscope (covered with a diaphragm) was applied to different parts of the tube. By this method, the pitch was found to be most appreciably raised the further from the fork the stethoscope was applied to the tube. The elevation of pitch was easily recognised at a distance of 2½ inches. Next, an aorta was tied to the mouth of a tap, and an artificial murmur produced by causing a constriction of the vessel by a piece of twine tied round it. The pitch of the murmur so produced was decidedly raised the further it was heard along the vessel from the point where the sound was generated. It was easily appreciated at a distance of 2½ inches.

To set the question quite at rest, a tourniquet was placed over a man's femoral artery, immediately below Poupart's ligament, and an artificial murmur thus produced; this was found to rise in pitch in passing down the course of the vessel. A well-marked difference was noticed at a distance of 2½ inches. The intensity of the murmur quickly diminished in passing to the right or left of the vessel, the pitch being at the same time rapidly raised, which was due to the interposition of the integuments; but this interposition could not be the cause of the rise of the pitch in the course of the vessel, as the murmur could be heard in that direction at a distance of at least 6 inches, whilst it was completely lost at a distance of 2 inches to either side of the vessel. Thus the murmur must have been conducted by the blood; whilst the same thickness of integuments was over the artery at the lower as the upper point listened to, for both points were above the place where the sartorius muscle crosses it. Indeed, in the paper alluded to, I have shown:—

1. Fluids at rest raise the pitch.
2. Fluids in motion still more.
3. Solutions raise it more than water.
4. Fluids holding minute particles in suspension raise it still higher. Now all these conditions are found in the blood.

The reason the pitch is lowered when the murmur is listened to at the second cartilage opposite to that to which the vessel producing the murmur runs, is, that it is conducted through the sternum, which has been shown to lower the pitch.

In passing up to the sternal notch, the pitch of a basic murmur is found to rise. Here, probably, two causes act:—First, the vessel which conducts the sound is nearer this point; and, secondly, lung to some extent intervenes, which raises the pitch, gases having this tendency.

It has been stated above, that a murmur heard through lung is found to have its pitch raised. This is due to the air it contains. This has been proved elsewhere, but the following experiment also shows it. A patient presented himself with a loud mitral murmur, audible over the entire chest. A point where much lung, and only lung intervened, was chosen, and the stethoscope applied to this point. The patient was directed first to expire deeply, and the pitch ascertained. He was then told to inspire to the utmost, and retain it, whilst the pitch was again ascertained; and under the last condition it was found most appreciably raised. The only altered condition here was an increase in the amount of intervening air.

The following is the diagnostic application of the above facts :—

When a murmur is very intense, it is audible over the entire heart region, often rendering it difficult to decide whether there is but one murmur audible at the other orifices merely by conduction, or whether two original murmurs exist. The point of greatest intensity will decide one ; and, if percussion dulness excludes the possibility of fluid in the pericardium, and the pitch of the less intense murmur heard at the other orifices be higher than that of the most intense, this is indubitable proof of the existence of a second murmur.

In cases where tumours simulate in their percussion dulness, fluid in the pericardium, should a murmur exist, the tumour being solid would probably lower the pitch ; should it be however fluid, the pitch would be raised by conduction through it. Again, it is often difficult to decide whether a basic murmur be aortic or pulmonary, or both ; it being heard with equal intensity at both second cartilages. If aortic only, the pitch will be heightened at the second right cartilage, but lowered at the second left, and *vice versa* in the case of a pulmonary murmur ; whilst, should both exist, the pitch will be heightened at both cartilages.

In conclusion, I beg to thank Dr Wylde, the conductor of the Philharmonic Society, for kindly examining and corroborating many of the experiments devised to elucidate this matter ; and also Dr Hardie of Leith, who greatly assisted me in conducting the same.

Part Second.

REVIEWS.

On Obscure Diseases of the Brain and Disorders of the Mind. By FORBES WINSLOW, M.D., D.C.L. J. Churchill, London. Pp. 706.

DURING the last ten years the field of psychological medicine has been cultivated with unprecedented assiduity in this country. We have now two quarterly journals devoted to this subject; we have seen two new text-books or manuals on insanity issued within that period, and numerous monographs on various departments connected with this branch of medicine. It cannot be doubted that all this indicates a rapidly growing interest in the study of mental disease, and must tend largely to propagate and extend the best means of curing this most important class of maladies. We are far from being surprised at this state of matters; on the contrary, our wonder has always been that diseases of the mind have obtained so little attention in the study of medicine. Disorders of the mind appear to us so far to transcend in interest and importance all bodily diseases,—in interest, as regards their physiological relations; and in importance, in their bearing upon our individual happiness, our social relations, and legal rights,—that our wonder has always been that they have not attracted more attention than they have ever yet done, and that they have not, long ere this, been made a part of the curriculum of medical study. The growing interest in the subject, despite its neglect in our medical schools, is demonstrated by the number of patients labouring under the slighter or incipient forms of insanity who now seek the advantages of special treatment, and whose cases appear to account, in a great measure, for the *apparent* increase of insanity in the country, while they are only evidences of the increased knowledge of the disease on the part of the community, and of its appropriate treatment. The increasing practical importance of this department of medicine is further demonstrated by the frequency with which the plea of insanity is brought before our tribunals, both in civil and criminal trials; by the large practice of some of our most eminent psychological physicians; by the popularity of our psychological journals; and, lastly, by the publication of such a bulky octavo as the volume before us on Obscure Diseases of the Brain. Among the numerous competitors in this arena of our art, Dr Forbes Winslow—the author of "The Anatomy of Suicide," the editor of the *Psychological Journal*, and the author of this and several other works—has long been pre-eminent for the fertility and popularity of his writings, and has occupied a very prominent position as a medical expert and as a consulting physician in the metropolis in cases of insanity. A work on obscure diseases of the brain, by one of his experience and standing, must necessarily command a considerable amount of interest.

To those who are familiar with Dr Winslow's previous works, the one before us will not, in all probability, bring any disappointment to their anticipations. It is an extremely readable book; so much so, as to make it in some respects suitable for the popular taste. Full of striking incidents and tragical events,—stories of love, suicide, and murder, illustrated by the confessions of the unhappy victims, and adorned by "thoughts that breathe and words that burn," culled from our best poets,—the volume may well be perused with thrilling emotion by those who have no further interest in the subject than a morbid love for the marvellous, or a natural sympathy with the insane. These recitals are strung together by a running commentary—moral, legal, physiological, psychological, and pathological—which displays a complete knowledge of the subject in all its practical relations, and adds largely to the interest and point of the illustrations. There is scarcely a single topic connected with insanity which is not thus commented upon: the moral obligations of the alieniste; the moral and legal responsibility of the insane; the duties, dangers, and difficulties of the psychological expert when called upon to act as a medical witness; materialism and phrenology; the connection of mind and matter; the co-ordinating psychical principle; the subjects of sleeping, sleep-waking, and dreaming; with many others,—form interesting episodes to the current details. The work is illustrated, further, by an amplitude of citations from all sources, ancient and modern, anecdotes of great men, and quotations from great writers, such as to indicate a vast range of research on the part of the author, and to add greatly to the popular interest of the volume.

Those who take up the work with the view of obtaining an addition to their stock of knowledge "on obscure diseases of the brain," will, we fear, be somewhat disappointed. There are undoubtedly scattered here and there a number of very valuable remarks on the importance of recognising the early and incipient symptoms of insanity; a variety of interesting cases illustrative of latent or unsuspected and incipient mental disease, showing what kind of symptoms might be looked for, and looked upon with apprehension; but those really valuable facts are so sparse, and so mixed up with irrelevant facts and digressions, that we must confess to some degree of impatience and fatigue in our endeavours to glean them from out the harvest of other fruits.

We think our readers will not deem us unjustly censorious on this point when we mention that, omitting the first 60 pages, which contain a few very pertinent remarks of an introductory kind on the importance of detecting early symptoms of disease of the brain, followed by somewhat impertinent disquisitions on the nature of insanity, on our ignorance of mental and nerve forces, on dreaming, and the former barbarous treatment of the insane,—we come upon 100 pages, which consist of the autobiographies of several patients labouring under delirium tremens and other forms of insanity, neither singular nor "obscure" in their nature. One of these cases, cited from Dr Hood—a case of delirium tremens, or one of allied insanity—extends over 58 pages of letter-press, thus occupying one-twelfth part of the entire volume. So large a quotation from another author, not even remotely bearing upon the subject professed to be elucidated, is rather too bad; but it might be forgiven if the fertile resources of the author did not betray him into the same error in nearly every chapter of the work.

It grieves us to write in such terms of a work issued under the name of so accomplished a writer as Dr Winslow,—the more so, as we feel satisfied that if those parts of it which really bear upon the incipient symptoms of insanity and obscure diseases of the brain had been properly systematized and separated from irrelevant matter, we would have had a really valuable collection of facts bearing upon this important subject. Diluted, however, as they are, in this large treatise, and scattered through so much matter of general but unrelated interest, we fear they will conduce little to our advancement in the knowledge of "obscure diseases of the brain." A cursory glance at the running titles of the pages before us will amply justify this judgment. What, we may ask, have "Confessions of a Patient after Recovery" from Delirium Tremens, "Popular Ignorance of Insanity," "Danger of Lunatics being at Large," "Anomalous State of the Law of Lunacy," "Singular Case of Hallucination," "Effect of the Russian Campaign on Buonaparte," "Assimilative Power of the Blood," "Curious Mental Phenomena caused by Drowning," the "Insanity of Ophelia," or the "Wail of the Homicidal Maniac," etc. etc., to do with obscure diseases of the brain? A large portion of the volume consists in a very excellent and valuable analysis of the incipient symptoms of insanity, apoplexy, epilepsy, senile dementia, and general paralysis,—all most praiseworthy and correct, but more proper to a treatise on these well-known affections than to one professing to give us, what we at least anticipated from the title, some new light upon diseases of the brain, less known and more "obscure."

Despite our disappointment at not getting something better, and more to the point, from so able a writer, we must confess that the volume is a most interesting and readable one, and contains a vast amount of matter for reflection and suggestion. We trust that the promised volumes on Organic Diseases of the Brain, of which this is only the preface, may prove worthy of the reputation of the author.

Therapeutics and Materia Medica. A Systematic Treatise on the Action and Uses of Medicinal Agents, including their Description and History. By Alfred Stillé, M.D. Philadelphia, 1860. Two Vols. 8vo, pp. 813 and 975.

Rarely, indeed, have we had submitted to us a work on Medicine, so ponderous in its dimensions as that now before us, and yet so fascinating in its contents. We assure our readers that we never occupy the chair of critical judgment with less pleasure than when its duties constrain us to pronounce an unfavourable sentence; and many an author, unhappy in his pretensions, has been indebted to the forbearance of our silence, for his freedom from a censure which it would have been painful to us to impose. It is, therefore, with a peculiar gratification, that we recognise in Dr Stillé the possession of many of those more distinguished qualifications which entitle him to approbation, and which justify him in coming before his medical brethren as an instructor. A comprehensive knowledge, tested by a sound and penetrating judgment, joined to a love of progress, which a discriminating spirit of inquiry has tempered so as to accept nothing new because it is new, and abandon nothing old because it is old, but which estimates either according to its relations to a just logic and experience, manifests itself everywhere, and gives to the guidance of the author all the assurance of safety which the difficulties of his subject can allow. Doubtless, there are many points on which the experienced reader may differ from him as to the certainty of his facts; and these points may even be more numerous than others on which he may feel called upon to impugn the accuracy of his conclusions: but Dr Stillé is nowhere a dogmatic writer, and his justice and candour never permit him to fall into the defect, so imposing upon the unthinking, of making the boldness of his assertions compensate for the inadequacy of his proofs. On the contrary, he shows himself throughout as a rational sceptic, yet temperate in his scepticism; and never as a sweeping gainsayer of the power of remedies, the very recklessness of whose unbelief is the proof of his credulity. His work, therefore, is one which cannot be read without profit, and as such we trust that it will command a wide attention on the part of the medical public.

While we are willing to add a few observations in justification of the accuracy of our verdict, it must be evident that, with a treatise so extensive and so multifarious in its topics, it becomes impossible for us to enter upon any minute details. We shall content ourselves, therefore, with merely casting our eye over the work as a whole; and where we offer an occasional comment, it will be not so much upon any motive for selection, as upon the chance which may attract us towards an individual subject. As to the general plan of the author, it has not rendered it incumbent upon him to supply any more full information, regarding the substances and preparations in the Materia Medica, than was merely requisite for the illustration of their therapeutic application; and the consideration of the latter, therefore, is to be regarded as the more essential object of his work. Throughout the tenor of his disquisitions, and especially in the historical details, it has been, of course, impossible for him to avoid recording many fluctuations, and even many contradictions, of opinion in relation to the various remedies; but from these, and from their due estimation, he has not shrunk. Railers against the reality of our science point to these contradictions as its opprobrium, and proceed, from their existence, to decry the value of the whole resources of the physician. Wise practitioners, moreover, they tell us in confirmation, use drugs sparingly, while old ones abandon their faith in them altogether. While we assent, in part, to the truth of these propositions, it is to draw from them very different conclusions; and this, we trust, because we approach them without the presumptuous bias of such assailants, and endeavour to bring to their consideration a more scrupulous discrimination.

If the history of Therapeutics, or of the introduction and appreciation of remedies, could be separated from that of the too frequent ambition, or emulation without the dignity of ambition, and cupidity of those practising the art, as well as from the misleading influences of the folly, credulity, and wilfulness of too many of those upon whom it has been practised, and our task had been only to deal with the simple relation between the sagacious and honest physician and the sagacious and docile patient, the annals of our science, however necessarily finite that science in even the most extended of its aims, would have recorded a far more solid and convincing, because a far more direct and unvitiated progress. But even the honest physician may be sometimes an enthusiast, and we may have the reckless innovator from self-deception, as well as from thirst for notoriety or charlatanry. Carried away by some favourite hypothesis, the sincere minister of a science may hold a course far apart from the true science itself, of which he may thus be mentally unfitted to apprehend the scope, the reasonings, and the doctrines. But as for these vagaries the science is not responsible, it should be no further liable to the reproach of their existence than in so far as it suffers from their danger. And if the old practitioner, as the scoffers are prone to aver, and as we may in part admit, not rarely loses much of his faith in medicine, neither is the inference speciously derivable from this by any means so absolute as to justify its acceptance. We are ourselves too near the verge of age to be willing to speak in its disparagement: but age, we know, in all that concerns life and the associations of life, is not the season for hope and confidence; and if the veteran physician, chastened though his spirit may be into gentleness, sometimes looks with a colder eye on the resources of his art, it is but because his glance rests with less ardour on everything else that is worldly, and beyond which he is gliding. It was with some such retrospect to the affairs of this life, that even our energetic Sydenham spoke of professional success and fame as "vero populi halitum plumâ leviorem aut bullâ, atque umbrâ insomnii magis evanidum;" and asked why he, "jam senex,"should care for that applause, of which, he alleged, so little had been actually conferred upon him during his career of admirable labour. "Quid enim mihi post obitum prodesse queat ut octo elementa alphabetica in istum ordinem redacta, ut nomen meum componant, eorum linguis jactentur, qui non magis aliquam mei ideam animo possint effingere, quàm ego jam queam concipere qualesnam tandem illi futuri sunt, qui omnes et mortuos prioris seculi ignorabunt, et aliis tum dialectis tum moribus utentur, pro rerum humanarum omnium inconstantia ac vicissitudine. At quorsum ego de aliorum judicio sollicitus sim?"[1] But the value of posthumous fame is not with the dead, upon whom it is conferred, but with the living who confer it; and thus it is the true interest of the world that it should be purely earned, that the example of success may be an encouragement only to the worthy. With a better consideration of such matters, we should have had a more perfect and certain system of therapeutics. As it is, it must be ever with a mixture of gratification and melancholy that we peruse such a work at that of Dr Stillé, in which we find embodied so many valuable and well-ascertained truths, mixed with the indications of so much that is unstable in fact or crude and undetermined in opinion. Yet, on the whole, the lover of our science may well congratulate himself, that the preponderance of real truths, for those who can distinguish them, remains so precious and so ample.

We shall not enter into any criticism of Dr Stillé's system of classification of therapeutical agents; because, if we see reason to take exception at some of its details, to discuss these would only be to offer new proofs of the futility of any attempt to give precision to that, in which a mutual interdependence, with a frequent complexity, of action admits, for the most part, only the possibility to mark the broader outlines of an arrangement. We prefer, in exemplification of Dr Stillé's judicious handling of individual departments, to refer the reader to his group of General Stimulants, and particularly to his clear and intelligent view of the included topic of electricity. We have encountered, indeed, nowhere, in the same space, a better explanatory statement of the nature, laws, and uses of electricity, as applicable to medicine; and the success of the author here is the more remarkable, that he has not permitted himself the advantage of aid in his illustrations through drawings or diagrams. The use of galvanism, however, as a means of illuminating cavities or canals in the human body, for purposes of operation or of diagnosis, is omitted, as doubtless too recent to have been included among the author's researches. Neither does his equally able discussion of the subject of alcohol, in the same group, lead him to refer to the extraordinary doctrines on the treatment of inflammation, recently promulgated by Dr Todd, who has survived for so short a period their full announcement to the profession. These doctrines, however, we do not term in any sense extraordinary, solely from an idea of their novelty: for, unfortunately, the history of medicine, a branch of study, which, if it were more regarded, would save us from many acceptations of prodigies of originality, shows us that it was but the revival of a dogma which has already more than once risen and fallen in the annals of the art; varying only, at each successive appearance, through the new guise communicated by the dominant phraseology of the day, but not in its essential character. A ready example of this occurs to us, as presented by Dr Marcus, a physician of note at the close of the last century, in whom the development of the Brunonian theory culminated to so extreme a point, that he felt himself justified in distributing, among nearly five hundred patients labouring under general disease in the hospital at Bamberg, an average quantity of a drachm of opium, three drachms of camphor, and a pound of spirits of wine to each, besides a host of other stimulants. Or, if we prefer, for so wayward a practice, to refer to a popular rather than to a scientific illustration, we may find it in Montaigne,[1] who tells us that the rustics in his time, in all cases, "n'employent que du vin le plus fort qu'ils peuvent, meslé à force safran et espice;" and this with an excellent success. But we deem the views of Dr Todd extraordinary, inasmuch as they have proceeded from a physician of his acknowledged talent and eminence, and yet are sustained, in our estimation, by so little exertion of logical acumen, that it is neither just to admit the consistency of his facts, nor, were the bearing of these less doubtful, the relevancy of the deductions.

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[1] *Epistola auctoris ad Thom. Short.*

When discussing, under the head of Narcotics, the virtues of Belladonna, Dr Stillé introduces a notice of certain interesting views, familiar to our readers as advanced by Dr Anderson, and narrated in a former number of this Journal.[2] The idea upon which Dr Anderson proceeded, our readers will remember, was that, because belladonna dilates the pupil, it might also serve to countervail the conditions in which an opposite state of the pupil becomes a prominent symptom. He accordingly essayed the exhibition of the medicine in cases of poisoning by opium, and the results encouraged him in the confidence that its action was that of an antidote. A similar success was shortly afterwards recorded by Dr Mussey of Cincinnati: and, as a converse to the proposition, our readers will also remember that Mr Benjamin Bell recorded in our pages two cases in which Morphia seemed to be successfully applied as a counter-poison to Atropia, the hypothesis thus apparently enduring the kind of test which was best adapted for its confirmation. And yet, apart from any collateral inference to be drawn from the results of a merely topical application, there seems to be no absolute and necessary connection between the localized effects of belladonna on the pupil, and its generally deleterious or narcotic effects on the entire system. At least, if we are to refer to its action on the lower animals, these properties appear to be wholly distinct from each other; and Dr Anderson tells us, in a very recent paper,[1] confirming many analogous statements, that rabbits will feed for months on belladonna leaves, and have their pupils dilated all the time, while otherwise they remain unaffected. We must hesitate, therefore, before we accept the one power as a criterion or index of the other; and it is no contravention of the evidence thus suggested of a want of identity in both, but manifestly the contrary, to point to the well-known insusceptibility of herbivorous animals to the action of narcotics generally, as narcotics, of which we have ourselves, for example, known almost incredible instances in the ewe shortly after parturition. It is scarcely an analogy here, that nicotine and morphia have been used as counter-poisons to strychnia, because the rationale of the proceeding rests evidently upon a wholly different basis. The entire subject, however, is one of great interest, and we still look forward to its more perfect elucidation. If we have the fact established before the theory, it will be neither a novel nor an unnatural progress in medical inquiry.

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[1] *Essais*, Liv. ii., ch. 37.

[2] *Monthly Journal of Med. Science*, April 1854, p. 377.

When it is recollected what must be the natural prejudices of the American physician, in favour of anæsthesia by ætherization instead of that by chloroform, it must be admitted that Dr Stillé has treated this important subject with much impartiality. Our Transatlantic brethren are not likely to forego easily their claim to what they must account as really the true and absolute essence of so momentous a discovery: the fact, viz., that by means of the inhalation of a vapour, an individual might be rendered insensible to pain during the progress of an operation, or, as the plainest of sequences, during the pressure of any other source of physical suffering; while they could exhibit, at the same time, the actual and successful practical application of the fact. The boon was here bestowed at once, and in all its integrity. It was comparatively a slight matter that Nicolaus Præpositus, the founder of our modern pharmacy, should have detailed to us, early in the twelfth century, the mode of preparing the "spongia somnifera,"[2] the vapour of which was to be inhaled to produce insensibility during severe operations; or that we should find the fainter indications of a similar notion so early as in the writings of Dioscorides, and thence lingering onwards to the seventeenth century. Practically, the power implied had either never truly existed, which is the more probable, or it had been utterly lost. Nor can any mere after-substitution of one agent for another, however manifestly of more perfect adaptation, ever compete equally with that original merit, which first achieved and perfected the double success of promulgating the idea of a painless surgery and then demonstrating its truth. The world will be forgetful of itself, when it neglects to render to Morton and Jackson its tribute of gratitude for their precious gift to humanity; and science, which has no nationality, willingly recognises this peculiarly American claim, to adopt it as a source of universal triumph.

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[1] *Edin. Med. Journal*, June 1860, p. 1103.

[2] *Antidotarium* Nicolai: *Ap.* Mesuæ *Op.*, p. 185.

It was to be expected that Dr Stillé, while admitting the superiority, in many respects, of chloroform over æther as an anæsthetic application, should have pointed to the alleged greater fatality with which the use of the former has been attended. Without attempting to estimate the number of cases which have not reached the medical journals, and which are undoubtedly not few, (more than one having occurred within our own private sphere of knowledge), he reckons the aggregate of the published deaths, from inhalation of chloroform, as 68 up to his time of writing. But this aggregate may unquestionably be still considerably extended, by those who will institute their search with sufficient care and wideness throughout the foreign periodical literature of medicine. As it is, there could be no greater error than to slight its gravity; and it is an error which our profession, the constituted guardian of life, is not likely to commit. The more that it seems manifest that the public will never be induced, and should not even be persuaded, to abandon the resource of anæsthesia, the more it becomes our duty to surround its use with precautions; and especially to see that the occasion which demands its application is commensurate with the implied hazard. It is sad to reflect, that by far the larger proportion of cases of death from chloroform have been incurred in very trifling operations, and to escape but a momentary suffering. But a dangerous remedy, Dr Stillé well remarks, is only justifiable, when the object is to avoid a greater danger, and there are those who may not unreasonably dispute whether it be always justifiable then. We abet a serious fault when we use such a resource for nothing better than to foster a pusillanimity. Neither are we entitled to justify one risk in medical practice by adducing another; or to say that, because there is risk in opium, we must overlook it in all besides. The existence of a danger can be no reason for multiplying danger, or, in other words, for rendering it more manifold and more intense. Above all, let us hope that chloroform may be banished from the room of the dentist. Independent of the recorded instances of its immediately fatal use on so unworthy an occasion of hazard, it may have its after perils; and we have seen, in consultation, the last stage of the illness of a lady, whose previous history was that she had left, in a state of semi-stupor, the house of a dentist, where she had had a tooth extracted under chloroform; after which she had rapidly passed into a state of furious maniacal excitement, of which we saw the termination, in exhaustion and death within a fortnight. Our readers will remember that chloroform has been repeatedly charged by others as having been an exciting cause of insanity in those prone to its attacks, and we fear that this must be accepted as an example.

No one, however, can be more conscious than ourselves of the immense value of the induction of anæsthesia, when employed on an adequate occasion ; while we cannot see reason to hope that, even should chloroform be superseded as its instrument, an effect so intense can ever be produced by any other than a more or less hazardous agent. And yet we have never taught ourselves to look upon pain, merely as pain, willingly though all avoid it, as a wholly unmitigated evil. On the contrary, we believe that there can be no more unhappy temperament than that which has been trained to the yielding to a habitual dread of suffering. If the attempt of the Spartan to inure himself to pain, through its self-infliction, was one form of excess, the self-indulgence of the Sybarite, who fostered his solicitudes till it was said of him that he could not sleep upon roses if the leaves were crumpled, was another : yet, judging between them, there are few thinkers who will doubt with whom remained ultimately the fullest measure of real happiness. There is a balancing between moral and physical enjoyment, and moral and physical suffering, in this world, which, deny it who will, is necessary to the wholesome existence of the former. We willingly leave to profounder theologians than ourselves the question as to the bearings of the primeval curse upon our first mother ; and are, at least, as far as possible from attaching to it any rigid interpretation : but we cannot be insensible to the beauty and the truth, and the expansive sympathies, which belong to the words of Him who ushered in a milder dispensation, when He found a soothing illustration in telling, that "a woman when she is in travail hath sorrow, because her hour is come : but as soon as she is delivered of the child, she remembereth no more the anguish, for joy that a man is born into the world." We state this with reference to no religious dogma, and still less do we attempt to connect it with any strictly practical rule. Our object is only to show, in the direction of what special tendencies, and looking to the extreme of either, lies the prospect of the greatest sum of human happiness, as well as of the more ennobling, strengthening and purifying effects upon the human character. The propriety of using an anæsthetic in every real emergency, or to annul a pain which is essentially abnormal, or in itself manifestly prejudicial in its tendencies, rests upon wholly independent grounds, and remains as before.

Another topic, which we think has been treated with admirable judgment by Dr Stillé, is that of the therapeutic applications of cold. This subject necessarily embraces a consideration of the effects of cold bathing, and leads to a notice of the so-called Water-cure. The hygienic and therapeutic uses of water, in their just limits, have been as familiarly known, as they have been highly prized, by every intelligent physician since the days of Hippocrates ; and the experience thus acquired has the better fitted all to appreciate the abuses, of which the simple element has recently been made the instrument. As we have no passion for breaking flies upon the wheel, we leave this, with other kindred creatures of the day, to the short life for which each is fitted and destined; looking back, meanwhile, with complacency at the immense past of our science, that we may augur for it, and for its essential truths, a prouder future. "In the times of popery and ignorance," says our sterling Huxham,[1] "when the priests were knaves, and the people fools, many a well was sanctified for nothing but pure cold water, the virtues of which the miracle-mongers wholly attributed to a saint of their own making." Curiously enough, long before the era of Priessnitz, the springs of Ilkley enjoyed that kind of reputation which many imagine to have been of a more modern date, and of a different origin, in the Wharfdale of Yorkshire. "On the slope of an adjoining hill," says Whitaker, the able antiquarian and topographer, writing of this locality at the beginning of the century,[2] "is a copious spring, which, with little or no medicinal quality, but extreme coldness, has been found very serviceable in relaxed and scrofulous cases. Late hours, confinement in populous towns, the too plentiful use of strong or even of weak liquors, and many other circumstances in modern habits, render such retreats more necessary than formerly; but it may be supposed that, in addition to the bath, pure air, a plain table, bodily exercise, and repose of mind, have each a share in the effect produced. How long this well has been frequented I know not." The worthy divine has so well indicated the true scope and rationale of such cures, in such quarters, that we are inclined to advert to another and older topographer,[3] for what our readers may be pleased to accept as an anticipatory illustration of homœopathy. "The air of Cheshire," he writes, "is very wholesome; insomuch that the people of the country are seldom infected with diseases or sickness, neither do they use the help of physicians nothing so much as in other countries: for, when any of them are sick, they make him a posset, and tie a kerchief on his head; and if that will not amend him, then God be merciful unto him."

We had noted several passages in Dr Stillé's comments on the remedial operation and uses of cold water, to which we had designed to append a few observations founded on our own experience, but our space will hardly permit us. We may merely mention, with reference to its application to the treatment of constipation, that we have occasionally recommended, with apparent advantage, cold sponging along the tract of the colon, and in the direction of its channel, in cases where slow defecation seemed to depend upon a condition of muscular atony of the intestine. While perusing Dr Stillé's observations on the use of water in surgical dressings, we were reminded also of the recently recorded experience of Professor Naranowitsch, of the University of Charkow, who appeals, as the "simplex veri sigillum," to the fact, that he had performed 178 operations, upwards of 20 of which were of importance, without a single death; and who tells us that it was his rule that the wound should never be wetted, the whole treatment being conducted without the application of a single drop of water. The dressings used were dry cotton wool, or charpie: occasionally the latter was imbued with oil.[1] By those who have been accustomed to observe the excellent effect of the ancient, and lately revived, use of water-dressings in surgery, or who have listened penitentially to the objurgations of modern surgeons against their old familiar, the inoffensive looking poultice or ointment, the practice of the Russian professor will be slowly imitated. But it may at least give, or renew to us, the lesson, that, so long as the course of nature lies in a normal direction, it is solely necessary that she should not be arbitrarily interfered with; while even the action of the simplest remedy must vary with the varying conditions of the organism at the time of its application, and should receive its adaptations accordingly. We have scarcely here to deal with one of those occasional fashions or caprices in medicine, which belong more to its ministers than to its science, and to which the "Prenez-en vite, tandis qu'elle guèrit" of Bouvard applied, which he gave as his answer when consulted regarding the bark of the elm, attempted to be exalted for a while into a kind of panacea during the last century. But if the opportunity for the patient be likely to pass away thus with the vogue of the remedy, these ephemeral reputations convey their important lessons also, though we can naturally never derive their full effect from them, while the credulity of the greater portion of the public outweighs its penetration. Meanwhile, it is the real truths of a science that survive civilisations, to be transferred successively from an older to a newer; or should their lights disappear, or become obscured at one era, it is to arise with fresh lustre in another, and glow enduringly at last.

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[1] *On Fevers*, p. 30.

[2] *History of Craven*, p. 206.

[3] Smith, *Treatise on Cheshire*, 1656: Ormerod, *History of Cheshire*, vol. i., p. 102.

Of the more peculiarly American articles of the Materia Medica, commented upon by our author, the *Veratrum viride*, recently introduced into practice by Dr Norwood with large commendations, deserves some special notice. Though there are still some discrepancies of opinion regarding this remedy, its action seems to be generally admitted as that of a powerful arterial sedative; occasionally producing vomiting, and more rarely catharsis; but capable of reducing, even within a few hours, the pulse to thirty-five beats in a minute, independent of all depressing influence as a merely exhausting evacuant. It is usually exhibited in the form of a tincture of the root, of which six or eight drops may be given to an adult, and repeated, with a slight increase, every three hours, until nausea be felt or the pulse begin to fall. In an excessive dose it produces faintness, somnolency or coma, dimness of sight, dilatation of the pupils, vertigo, headache, rarely delirium, impaired muscular action, hiccup, a cold skin covered with clammy sweat, excruciating pain in the præcordia, profuse watery diarrhœa in some cases, and a small, infrequent, and generally feeble pulse. Yet symptoms so alarming, we are informed, have never hitherto been the forerunners of a fatal termination. Despite its evidently potent sedative influence on the heart and nervous system, certain of those who have employed it maintain that its greatest value as a remedy consists in its adaptation to adynamic or asthenic diseases, and the efficacy of its use in typhoid fever is adduced as an example. Possibly, there is nothing so contradictory in this as may be, at first sight, cognisable, and we find many points of obvious analogy in the ordinary estimations of the therapeutic actions of Digitalis. A sedative, acting purely as such, but with its action guarded under appropriate limits, may operate favourably in asthenia by reducing the frequency of the pulse; and so permitting an accumulation of volume, and yielding consequent adequacy of force, to the systolic wave: and yet, on the other hand, it may be beneficial in sthenic disease, by abating, in any already ample current, the disproportionate impetuosity of its movements. In either instance, it is the normal standard which is aimed at and approached, though from different directions, and with a necessarily different collateral support and basis of operation. Of this remedy, we have ourselves no individual experience; but with our confidence in the beneficial application of foxglove, now in a sthenic, and now in an asthenic, form of disease, yet nowhere free from imputation of possible hazard in either, we can easily believe that its use may be often advantageous, if its energies admit of being controlled with safety. It is at least certain, that if the facts in nature be true, in therapeutics they cannot really involve a contradiction, however obscure the means by which the result is accomplished. Another American remedy, the bark of the *Prunus Virginiana*, or *Cerasus serotina*, recommended on the score of its combination of a tonic with a moderately sedative action, is better known in this country; but we have ourselves preferred, after a trial of its qualities, to resort to a union of Infusion of Calumba, with a commensurate proportion of Hydrocyanic acid, as affording a more than equivalent substitute. We merely allude, further, to the seeds of the pumpkin, *Cucurbita Pepo*, as an indigenous remedy which has been found of great efficacy by our transatlantic brethren in the treatment of tapeworm.

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[1] *Hygiea*, 1858, p. 61.

In conclusion, we earnestly advise our readers to ascertain for themselves, by a study of Dr Stillé's volumes, the great value and interest of the stores of knowledge they present. If his history of therapeutics, accompanied always, under each head, with a careful rendering of his authorities, disappoint us sometimes by the paucity of its early notices, it would yet be unjust to charge it as offering less than all the research and comprehensiveness that could be fairly demanded as associated with his design. To accede to the truth of the universality of the opinions, in a work so copious and so diversified in its topics, would be manifestly impossible; and we had marked, among others, a few points relating to the absorption of remedies by the skin, the employment of blisters, of the sea-bath, and of antimony, lead, mercury and iodine, with reference to which we would willingly have appended an occasional comment, or hinted a dissent. But forbearing to seek a rigid uniformity of result in matters of doctrine, where the quantities in matters of fact with which the physician has to deal are of necessity so rarely identical, we have pleasure in referring rather to the ample treasury of undoubted truths, the real and assured conquest of medicine, accumulated by Dr Stillé in his pages; and commend the sum of his labours to the attention of our readers, as alike honourable to our science, and creditable to the zeal, the candour, and the judgment of him who has garnered the whole so carefully.

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1. *Notes on the Despatch of Troops by Sea.* By CHARLES J. KIRWAN, Assistant-Surgeon 13th (Prince Albert's) Light Infantry. Calcutta, 1859.
2. *The British Soldier in India.* By FRED. J. MOUAT, M.D., Surgeon, H.M.'s Bengal Army. Calcutta, 1859.
3. *Sketch of the Medical Topography, or Climate and Soils, of Bengal and the N.W. Provinces.* By JOHN M'LELLAND, F.L.S., F.G.S., Surgeon, Bengal Army. London, 1859.

WE are told that the rate of mortality among soldiers in India is ten per cent. annually, and that before a soldier can be landed in that country an expenditure of at least L.120 must have been incurred. Some high authorities have said lately that the country cannot be held with a less force than 100,000 white men. For such a force, liable to be killed off at the rate mentioned, the annual reinforcements—the mere drafts sent annually from Gravesend—would cost L.1,200,000. These are very startling and impressive figures; and when considered in connection with the evident necessity for the maintenance of a much larger force than heretofore, however we may differ about the actual numbers required, and with the recently published programme, which gives official authentication to that conviction, they are almost appalling. The immediate result of the really slight and exceedingly brief drain on the country's resources in men and muscle which occurred in 1854–5, was such as to exhibit a marked and great deterioration which had not by any means been recovered from when another and a heavier call was made by the Indian Mutiny. And now it appears that the demand is not to be merely exceptional and occasional, but that it is to be constant, and to a very great extent indeed. Evidently, the only hope of relief from so terrible a pressure must be sought in the endeavour to mitigate the severity of the rate of mortality, and of the proportionate rate of non-effectiveness which all the tables from India show. It would be strange, indeed, if it appeared that inquiries showed no result with regard to India, which, when directed into the right channel, and conducted in the right way, have exhibited the most satisfactory and happy results with regard to all other places. At home, whenever the statist has demonstrated an exceptionally high rate of mortality in any one place as compared with others, presenting a nearly similar set of conditions, it has always been possible for the sanitarian to ascertain the particular conditions on which the dissimilarity depends, and to predict, with the most absolute certainty, that the removal or modification of these will be followed by a proportionate decrease of sickness and mortality. Fortunately, the inquiry is almost always a very simple one. We are not likely to be accused of disrespect to our Indian brethren at any time, and they will hardly charge it to us when we say that, up to a not very remote time, they were too apt to aid in the propagation of the popular notion, which represented India as a place in which disease was the rule, and health the exception, and in which the risks of sudden death, premature old age, and lingering sickness were always to be accepted in exchange for the chance of a rapidly accumulated fortune. The events of the last three years have worked a wonderful change in these notions. The British public is beginning to see more clearly the grounds on which it must consent to hold the country. It is perceived that there must be less expectation of brilliant individual fortunes, and that the country must become more tolerable and more habitable for those who venture to it, or it will be worse for us. As to this matter of the European force of soldiers, we have hitherto sent men out thither with little thought about whether or not they were at the right age, or prepared by the right training for the duties which would be immediately thrown on them. We have often landed them at the most unsuitable season, having taken but little care of how the voyage was conducted; and then we have located them in barracks, which would almost seem to have been built with the express object of creating disease, and situated often in the most unhealthy districts. It was such a settled conviction that many more men must die in India than anywhere else, that all this was done recklessly, and the result was accepted as a mere matter of course. We are beginning to think that disease in India is often just as much preventable, in a certain degree, as it has been proved to be at places nearer home,—say, at Ely or Scutari. We are beginning to think of India as a very hot country, with much marsh land; with a rainy season, which necessitates very skilful engineering;

with very ill-built barracks; in which the rations are very unsuitable; and in which there circulates a great quantity of very bad liquor. We are beginning to see that health in India is to be promoted by the very same means, and by attending to the very same considerations, which are admitted to be those which regulate sanitary matters in other countries, bearing always in mind climatic peculiarities. In viewing the whole question, we are required to consider no one point as being either too large or too small for our survey; because each one, great or small, has its own influence on the general result. The materials of the head-dress, the hours of meals, the number and position of sentries—these, and such like, may seem small matters to some, but in their own degree they are as important as the question of the spots on which the white troops are to be located,—which latter is a question of vast imperial importance in its different bearings, sanitary, financial, and strategical.

These three little books address themselves to different points of the broad question, and they may be said to be complementary, one to the other. Mr Kirwan tells us how and when soldiers should be sent to India. Dr Mouat, with whom we are happy to renew an acquaintance which was made over his pleasant little sketch of Reunion, tells us all about what should be the personal and general hygiene of the soldier in India—about his clothing, barracks, food, and drink. Mr M'Lelland, whose book, though much the most elaborate of the three, is also the most fragmentary, gives us a topographical sketch of certain districts, and traces endemic diseases to their first causes. All the three books are exceedingly creditable to their respective authors; and, if we must urge an objection to them, it would be, that the principles laid down are so sound, and that they so commend themselves to one's common sense, that there is really no point on which the critic can fasten for the sake of a little discussion. Mr Kirwan's pamphlet should be placed in the hands of every one who has the command or medical charge of drafts proceeding to the East; and the authorities at home should give the force of general orders to many of the detailed rules which he lays down on a subject which has been far too much overlooked. For any one who finds himself placed in sanitary charge at an Indian station, there cannot be a better handbook of reference on small points of management, than Dr Mouat's modest little book.

While wishing good speed to our three Indian brethren, we shall endeavour to indicate, in a few words, what seems to be just at present the most important subject of discussion in connection with Indian hygiene, and one which presses for a speedy settlement. In opposition to Malte Brun and most of the older authorities, but in sympathy with Sir Ranald Martin and more recent writers, Dr Mouat contends that the European can never become acclimated in the plains of India. He admits that there is much room for improvement in the circumstances under which the white soldier finds himself placed when located in the plains; but he asserts that, after a certain point of improved condition has been reached, there are still reasons for saying that a prolonged residence must be attended by a continuous process of physical deterioration, which must become more marked in each succeeding generation, until it ceases to be observed in the fourth or fifth, simply because it would be found impossible to transmit the race to that degree. There seems to be ample reason to accept this opinion as one which is now placed beyond the reach of controversy. If there were no relief from the necessary consequences of it, the prospect would be a black one indeed. But Nature is ever at hand with her compensations; and the whole continent of India presents an intersection of chains of mountains, by which a comparatively healthy and almost a European climate is offered at points which are within easy reach of all the stations in the plains, and which improved means of locomotion and the opening up of the industrial resources of the country will, year by year, render more easy of access. In the plains, the soldier cannot sleep at night; he is struck down by the sun by day; he is listless and enervated; he is surrounded by paludal emanations. But, a few days' journey from him, there are districts where there are cool night breezes, and at which those who can afford it have already found the circumstances which can speedily restore the rosy English colour to pale cheeks, and brace up a system shattered by the true Indian climate. That being the case, what one looks forward to as a remedy for a great part of the Indian mortality, is the abandonment of the stations in the plains by all but a few native levies, and the establishment of a plan by which all, or nearly all, the precious European troops would be placed at stations which are within easy reach on an emergency, but still sufficiently elevated to be able to supply the great necessities of health. There seems to be but one objection to this—the objection of expense. But it is not the huge solid barracks of the plains that are wanted; these have been found to promote anything but health. Indians tell us that heat and rain are best kept out by slighter erections, constructed after the native fashion, and proportionately cheaper. Huts are the healthiest barracks at home, and it would appear that a similar rule holds good in India. It seems very certain that, until this question is solved in something like the way we have indicated, there cannot be much expectation of being able to raise the standard of health in India.

On the Absence, Malformation, and Duplicity of the Uterus; also, On Superfœtation and Migration of Ova. By Professor KUSSMAUL, of Erlangen. Wurzburg, 1859.

Von dem Mangel, der Verkümmerung und Verdopplung der Gebärmutter; von der Nachempfängniss, und der Ueberwanderung des Eies. Von ADOLF KUSSMAUL, M.D., Professor in Erlangen. Wurzburg, 1859.

[SECOND NOTICE.]

THE second division of the work before us is devoted to the important subject of superfœtation. For the sake of accuracy and clearness, Dr Kussmaul is very particular at the outset, in stating what are the differential meanings of the terms "superfecundation" (*Ueberschwängerung*) and "superfœtation" (*Ueberfruchtung*). He gives a preference to the use of the word "superimpregnation" (*Nachempfängniss*), as comprehending the meaning of both the other terms. By "superimpregnation," he understands "every subsequent conception occurring at any period during the existence of a pregnancy. 'Superfecundation' is a subsequent conception occurring during the first menstrual or ovulation-period of pregnancy; while 'superfœtation' is the same event happening at some later time." He gives the following illustration to explain the meaning of his definitions:—A woman who has conceived is simply impregnated, yet she may never give birth to a fœtus, because a fecundated ovum is not a fœtus. If she should conceive again at or about this same period, then superfecundation, and not superfœtation, has taken place; for superfœtation can only happen when there has been a fœtus already in existence. A woman is said to have conceived when a ripe ovum has been fecundated within her uterus, or its appendages. One fruitful coitus may occasion impregnation of two or more ova, detached at the same ovulation-period; but "we do not," says our author, "speak of this occurrence as a case of superfecundation, but simply as one of multiple conception. Superfecundation takes place when *more than one of the ova of the same menstrual period* are impregnated at separate and distinct times; while superfœtation, as we have said, consists in the fecundation of ova which have been detached at different ovulation-periods."[1]

The possibility of *superfecundation* in the single uterus is seldom disputed, and its occurrence in the double uterus is still more rarely questioned. It has been observed in animals. "M. du Pineau a mandé a M. de Reaumur, qu' aux environs de Mauleon une jument avait produit d'une même portée un poulain et une mule."[2] Again,

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[1] It is possible that the spermatozoa of two different fathers, or emitted at two separate and distinct acts of coitus, may simultaneously, or nearly so, produce impregnation of the *same ovum*. This is called by Kussmaul, "double fecundation" of the ovum.

[2] *Histoire de l'Acad.* 1753.

Castell relates that a brood mare, which within five days had been served by a stallion and by an ass, brought forth a horse-foal and a little mule.[1] Many cases are recorded of women, who had received the embraces of men of different races shortly after each other, giving birth to children of two different kinds.[2]

The most important question, however, which now concerns us, is as to the possibility of the occurrence of *superfœtation*, according to the strict meaning of the term. This has usually been denied for the single, and admitted for the double uterus. Dr Kussmaul thinks that the following points require consideration, to enable us to arrive at any satisfactory conclusion.

1*st*, Can ova become ripened and detached during pregnancy? This is evidently the turning-point of the whole argument.

2*d*, Does the condition of the pregnant single uterus, or of the gravid division of a double uterus, offer any absolute hindrance to an after fecundation?

3*d*, Does the condition of the non-pregnant half of the double uterus present any impediment to a secondary impregnation?

4*th*, What proof have we of the validity of hitherto recorded cases of super-conceptions occurring in single and double uteri?

As regards the first of these queries, we may remark, that Professor Scanzoni of Würzburg considers that the process of ovulation goes on during pregnancy in most cases, although its external evidence, menstruation, is absent.[3] He says, that in many bodies which he has examined shortly after delivery, he has observed the Graafian vesicles to be swollen and filled with coagula of blood, and that he has seen all the appearances of the recent discharge of ripened ova. His theory is, that the ovulation-process goes on uninterruptedly during pregnancy, and that catamenial molimina occur periodically, which are only accompanied by a sanguineous discharge in exceptional cases, but which are peculiarly prone to be periods of abortion in persons who are predisposed to miscarry. Kussmaul, however, says, that little reliance can be attached to this statement, because, in one of the cases recorded in the first part of his work, a female with fœtal ovaries, which never ripened any ova, experienced the periodical recurrence of catamenial molimina; while in another case, quoted by him from Steglehner, of a young "lady" who had such sensations regularly, there were found testicles instead of ovaries, when the body was examined after death. As regards the proclivity to abortion at the menstrual epochs during pregnancy, our author thinks, that until it can be proved that the number of miscarriages is greater at these periods than at other times, we can arrive at no legitimate conclusions on the subject. In cases where hæmorrhages take place periodically during pregnancy, there is, of course, a greater liability to abortion; but these discharges are not necessarily attended by the maturation or detachment of ova. Again, Kussmaul does not consider that the presence of several corpora lutea is any proof of ovulation having gone on during gestation. Two or three corpora lutea may be produced at one catamenial period, when the ova detached have been maturated in several distinct Graafian vesicles; and not only so, but these yellow spots may present unusual aspects, according to age, because pregnancy not only favours their development, but also delays their retrogression and disappearance.[1] The discovery of freshly ruptured Graafian vesicles in the bodies of women who have died during pregnancy, or shortly after parturition, would strengthen the theory of Scanzoni; but it so happens that other equally well qualified observers have failed, under such circumstances, to confirm his observations on this point. Thus Kiwisch,[2] out of many hundred *post-mortem* examinations of recently delivered women, found no traces of fresh cicatrices in the ovaries. Professor Virchow, who makes a point of examining the state of the Graafian vesicles in every female body he inspects, and who had abundant opportunities of investigation during the late fatal epidemic of puerperal fever at Berlin, informed Kussmaul personally, that he never could satisfy himself of the existence of ovulation during pregnancy, although he had most carefully searched for its anatomical proofs. Dr Hecker, the obstetrician of Munich, also told him, that although he had carefully looked for recent cicatrices in the bodies of recently delivered women, he had been unable to discover them. Without denying the possibility of its occurrence, he regards ovulation during pregnancy as rare and exceptional, instead of being constant, according to Scanzoni's theory. Kussmaul's own investigations in the literature of extra-uterine pregnancy, and his examination of the records of about forty cases, have failed to convince him of the formation of corpora lutea during gestation.

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[1] *Meissner's Forschungen*, Band iv. 1833.

[2] Beck and Taylor, in their works on Medical Jurisprudence, give numerous illustrative cases.

[3] *Lehrbuch d. Geburtsh.*, 3te Aufl. 1855, S. 320.

Again, if we examine the numerous cases of so-called superfœtation during extra-uterine pregnancy, we shall find that, in nearly all of them, the secondary pregnancy took place when the extra-uterine fœtus had been dead for a longer or shorter time. The older authors called this "spurious superfœtation," to distinguish it from the true variety. A woman bearing within her an ossified or mummified fœtus, differs physiologically from a woman who carries a live child, which is in immediate contact with her own organism through the medium of the placenta. In the former case, she resembles a woman who has an abdominal tumour rather than one who is pregnant. She is then in a condition to maturate ova, to menstruate regularly, and to become pregnant. Accordingly, cases have occurred in which women bearing an ossified extra-uterine fœtus have again become pregnant, not only once or twice, but even six or seven times. Dr Campbell, in his work,[1] cites many such cases; and Kussmaul supplements the list by giving some of the more recent instances on record.

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[1] Bischoff found this long-continuance of the corpora lutea in the roe. See his work on the Ovum.

[2] *Geburtskunde*, Bd. i., S. 216.

From a careful consideration of the whole subject, our author believes, *first*, that superfecundation during pregnancy is very rare, if, indeed, it has ever been witnessed; and, *second*, that the process of ovulation during gestation is very uncommon.

As regards the second of the proposed inquiries, it seems certain that the physical condition of the impregnated single uterus, or of the gravid division of the double uterus, presents no absolute bar to a second fecundation taking place within the first two or three months. The notion, that immediately on the occurrence of conception the os uteri became hermetically sealed by a mucous plug, is now quite exploded. For much of the definite knowledge which we possess on this point, the medical profession is under deep obligations to Dr Matthews Duncan of Edinburgh, and the writer was much pleased when Professor Kussmaul orally expressed to him this opinion. In the work before us the observations of Dr Duncan are carefully explained,[2] and brought to bear on the matter at issue. We know that the mucous plug alluded to is not peculiar to the pregnant condition alone, for Dr Matthews Duncan says:—"My dissections of virgin and unimpregnated uteri have frequently, indeed generally, demonstrated the existence of this firm and adherent plug of mucus in the non-menstrual state." Again, he has shown that "the uterus is not closed up till sometime about the third month, and there is no reason to think superfœtation impossible till this takes place. Up till this time there is a sufficiently free communication between the ovary and the vagina, or between the ova and the semen." Moreover, even granting the plug to be present, it is not impervious to the entrance of spermatozoa.[3] It is easily removed by various causes, and it is reproduced with great quickness and facility. The catamenial fluid washes it away in the virgin uterus, and it is displaced to allow an exit to the sanguineous discharges which occasionally occur during pregnancy, or to the watery (Hydroperione) or mucous fluids which sometimes flow from within the uterus during gestation. So there is nothing whatever unreasonable in supposing that it is capable of being displaced or penetrated by the spermatic filaments.[1] The only insuperable hindrance to the admission of semen into a gravid uterus is the ovum itself, when it completely fills the cavity of the womb, and causes occlusion of the orifices of the Fallopian tubes.

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[1] *A Memoir on Extra-Uterine Gestation.* Edin. 1840.

[2] We refer the reader to the original paper of Dr Duncan, which was published in the pages of this Journal, April 1853: "On Menstruation in Pregnancy," etc.

[3] "Numerous physiologists adduce the plug of viscid cervical mucus as an impediment to impregnation during pregnancy; but frequent examinations have convinced me that this plug is dense and well-developed, and apparently impassable, in the non-menstruating unimpregnated uterus; and as it does not prevent conception then, so there is no reason to ascribe to it this function in early pregnancy."—Dr Matthews Duncan, *Edinburgh Medical Journal*, April 1853.

Now, as to the third question, Dr Kussmaul says, that, in the higher grades of duplex uterus, there is nothing in the physical state of the unimpregnated division which would prevent the occurrence of a fresh conception at any period of the pregnancy.

Lastly, as to the validity of the cases of superfœtation in single and double uteri, which have been recorded by various authors, Kussmaul believes that, in most of these instances, there has been a simultaneous and multiple conception; and that one fœtus has died, or been more or less retarded in its growth, while its fellow has been fully developed, and born at the normal end of pregnancy. The blighted fœtus may become mummified, or it may undergo a calcareous transformation into a stony mass, and still be retained *in utero*[2] for some time. Haller believed in the possibility of conception occurring in cases where there was already a petrified fœtus in the womb;[3] but this seems to be very doubtful indeed. We know very well, however, that the development of twin-children, begotten simultaneously at the same ovulation-period, may proceed very irregularly; that one of them may die, or become blighted, or malformed, while the other is normally developed into a healthy infant, which comes into the world at the ordinary time. The period which usually intervenes between the birth of the fully developed child and its blighted fellow varies exceedingly. It may be only a few minutes, or it may be several months. And this is not only true when one of the twin-children is imperfectly developed, but differences quite as remarkable have been observed in the periods of birth where both of the infants have been perfectly formed and fully grown. We refer the reader to the work itself for an interesting collection of cases illustrative of these facts.

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[1] The following remarks of a later writer on the subject than Dr Duncan, are worthy of notice:—"Cette barrière, qui peut, à la vérité, se reproduire facilement et promptement, est de sa nature essentiellement amovible, elle peut être facilement dissoute, expulsée par de faibles contractions. Aussi ne semble-t-elle mettre aucun obstacle aux écoulements sanguins et aux flux sereux leucorrhéiques, quand il s'en forme exceptionellement dans l'uterus, ou dans la cavité du col pendant le cours de la grossesse. Outre qu'il semble facilement permeable, ou ne saurait affirmer que le bouchon gélatineux ait une existence constante; car à une époque avancée de la grossesse le doigt ne se recontre pas ou n'en a pas la sensation lorsqu'on fait avancer son extremité à travers la cavité du col jusque sur les membranes."—JACQUEMIER. *Gazette Hebdom.*, 1856, tome iii., p. 776.

[2] Caldwell, *Edin. Med. and Surg. Jour.*, 1806. See also Gurlt,—Article, "Lithopædion," in *Encycl. des Med. Wissens.* Berlin, 1839.

[3] "Certissimum est, innumerabilibus exemplis confirmatum, et animalia, et feminas concepisse, et peperisse, dum conceptum priorem mortuum, etiam lapideum, in utero mater retinebat."

The last division of Dr Kussmaul's volume is devoted to the consideration of the very remarkable phenomenon called "Migration of the Ovum" (*Ueberwanderung des Eies*), which was first observed by Bischoff in several animals with bicornuous uteri. In the human female, this event is one of comparative rarity; but, nevertheless, it does occasionally occur. The human ovum may wander from the ovary of one side across the cavity of the single womb, and reach the opposite side. In the unicorn type of uterus, with an imperfectly developed "super-horn" attached (which has been described in our last notice), it sometimes happens that an ovum, from the well-grown segment, finds its way into the stunted appendage. And, again, in the normal uterus, an ovum from one side may cross the uterine cavity, enter the Fallopian tube of the opposite side, and there become impregnated and developed into a fœtus. This latter fact has been accurately proved by anatomical researches; and a knowledge of it tends to remove some of the obscurity which has hitherto shrouded true cases of tubal-pregnancy.

Prof. Bischoff first published his observations on this subject in 1842, in his prize work, "Die Entwicklung des Kanincheneies." In one remarkable passage he said,—"I examined the body of a bitch, and observed five corpora lutea in the left, while there was only one in the right ovary. To my great astonishment each uterus contained three ova, showing plainly that two ova had wandered from the left to the right side." Prof. Kussmaul lately applied to Bischoff, to inquire whether he had made any fresh observations since the date of his published work; and that eminent physiologist informed him that he had since then frequently seen cases of migration of ova. He also added, that although he had diligently looked for confirmations of his discovery in current medical literature, he did not remember ever having seen any. Bischoff wrote thus to Kussmaul:—"In deer, it often happens that both the ova come from the same ovary, and that one of them wanders across to the opposite horn of the uterus. In rabbits, where there is a complete duplicity of the uterus, and also of the *os uteri*, I have never observed such migration; the intervening vagina may possibly prevent its occurrence." Leuckart is of opinion, that when, in animals with double uteri, both ova are detached from the ovary of one side, one of them invariably passes over into the opposite half of the uterus.[1] And he has imagined the contractions of the uterus to be the motor power by which this transference of the ovum was effected.

In *post-mortem* examinations of puerperal women, corpora lutea are often observed in one ovary, while the site of the placenta is seen on the wall of the uterus on the opposite side. Our author saw such a case in Heidelberg, of a woman who died in the Lying-in Hospital, four days after delivery, from acute pneumonia. The placental wound covered the left wall of the uterus, and completely surrounded the orifice of the left Fallopian tube; and a distinct large corpus luteum was found in the right ovary, while no traces whatever of recent ovulation were discoverable on the left side. Virchow accidentally witnessed similar appearances in the body of a young female. He says,[1]—"On the anterior uterine wall, near the orifice of the *right* Fallopian tube, was situated the decidua reflexa, which contained an ovum about the size of a small wallnut, enveloped in a chorion, with long shaggy tufts. The corpus luteum was found in the *left* ovary, proving that the fecundated ovum had been detached here, and had wandered across to its present position on the other side." Kussmaul gives a series of very interesting cases to prove the migration of human ova. One is taken from Scanzoni, to illustrate the passage of the ovum into the stunted super-horn of a unicorn uterus. A very interesting original case is given, in which the ovum was detached from the right side, and wandered obliquely across the uterus, entering the left tube, where it was impregnated, and partially developed. Rupture of the tubal sac occurred, and the patient died, when all the interesting facts of the case were carefully ascertained. The woodcuts of this preparation are particularly well executed. He cites at length the second of Dr Oldham's "Two Cases of Extra-Uterine Fœtation," which were published in *Guy's Hosp. Reports*, 2d Series, vol. iii., 1845. In this case also the ovum had been detached from the opposite side. From an examination of the long array of cases cited in Kussmaul's work, the following conclusions may fairly be drawn:—

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[1] Bergmann and Leuckart, *Vergleich. Anat. und Physiol.*, p. 627.

1*st*, That in cases of extra-uterine pregnancy the presence of a corpus luteum is the rule, and its absence the exception; and this is specially true of the earlier months of gestation, when it is rarely found missing.

2*d*, That, as a general rule, one, or less frequently two, of these true corpora lutea may be seen on the pregnant side; that sometimes they are found existing on both sides; and, in exceptional cases, only in the ovary of the non-impregnated side.

3*d*, That we possess no observations which prove the continuance of ovulation during pregnancy, or external to the uterine cavity.

By what means are ova propelled along the Fallopian tubes, and across the interior of the womb?

The uterus and tubes, both in the human female and in the lower animals, are possessed of contractile walls, consisting of organic muscles which lie between the mucous membrane and the peritoneal covering. The mucous membrane of the uterus and of the Fallopian tubes is also provided with a coat of ciliary epithelium. Muscular contractions and ciliary motion are therefore the two motor forces by which the ova are propelled. Purkinje, Valentin, Bischoff, and other physiologists have shown that the cilia of the tubes move in the direction of the uterine cavity, and so favour the extrusion of the ovum. Bischoff[1] observed powerful peristaltic motions in the Fallopian tube of a guinea-pig, and he has even been able to watch the progress of the ovum during its passage along this duct. He described it as suspended or swimming in a sort of transparent fluid, which completely surrounded it during its transit. There seems every probability that by means of this double mechanism,—viz., ciliary motion and muscular contraction,—the ovum passes along the tube; and all the knowledge which we at present possess on the subject, inclines us to the belief, that by similar forces, acting in the uterus itself, the ovum is shifted about, on reaching the cavity of the womb, until it becomes lodged in the folds of the decidua.

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[1] *Gesammelte Abhandl.*, p. 776.

We must now bring these analytical and critical remarks to a conclusion; and, in doing so, we take leave of the author with great respect, thanking him, on behalf of the profession in England, for this valuable addition to our obstetric literature.

Postscript.—Since the foregoing pages were written, the reviewer has learned that Professor Kussmaul is no longer one of the medical celebrities of Heidelberg; as he has recently been elected to fill the chair of Clinical Pathology and Therapeutics in the University of Erlangen, in Bavaria.

The recklessness with which degrees in medicine were, at one time, sold to foreigners in Erlangen, caused its University to be looked upon with some suspicion in this country. We believe that this discreditable system has been abandoned for a length of time, both at Erlangen, Heidelberg, and other respectable German colleges. The University of Erlangen appears to be at present in a very flourishing condition. The celebrated histologist, Gerlach, is Professor of Anatomy. He is justly renowned for his exquisite injections, and for his methods of imbibition in microscopic preparations. Thiersch, the Professor of Surgery, is a clever operator, who has written a very valuable experimental work on the subject of the Contagiousness of Cholera. He is now, we understand, preparing for publication a large work on Carcinoma, which is anticipated with much interest in Germany. Kussmaul was called to succeed the eminent Professor von Dittrich, who is now unable for active duties on account of his advanced age. He is a great acquisition to the University, and will doubtless help to render it still more celebrated.

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[1] *Entwicklungsgeschichte des Meerschweinchens*, p. 17.

Part Third.

PERISCOPE.

MEDICINE.

CASE OF OBSCURE ANEURISM OF THE AORTA OCCURRING IN ST VINCENT'S HOSPITAL, UNDER THE CARE OF DR O'FERRALL.

The *post-mortem* appearances were submitted to the Pathological Society by Dr Stokes, who, in bringing it before the society, said that he did so as one of the secretaries of the society, on the part of Dr O'Ferrall, who was unable to attend. Dr Stokes said—

The case was one of aneurism of a portion of the aorta, and had some important and interesting features in connection with the diagnosis of that disease. The subject was a man aged 36 years. From his earlier manhood he had been of dissipated habits, and had led a reckless and intemperate life. He enlisted, and had been sent with his regiment to India. Whilst in that country his health gave way. He became affected with cough and pain in the left side. Being found unfit for duty, he was invalided and sent home; and shortly after his arrival in this country he was received as an intern patient into St Vincent's Hospital, in February last, under the care of Dr O'Ferrall. At the period of his admission he was labouring under severe dyspnœa, and a distressing cough, which seemed of a spasmodic character, and attacked him at intervals. During the paroxysms, which were violent, the cough was characterized by a peculiar ringing, and, as it were, metallic sound. The expectoration was scanty. This man complained, especially after an attack of the cough, of sharp, lancinating pains in the region of the right mamma, shooting from thence towards the axilla. Decubitus was generally, and by preference, on the right side. The man was much emaciated. His countenance was of a sallow paleness, and bore traces of great suffering.

On examining this patient, Dr O'Ferrall found that the entire surface of the thoracic region, on its left posterior aspect, sounded dull on percussion; muscular movement on the same side was very limited. On measurement of the thorax, no remarkable difference was perceptible between the bulk of its right and left sections respectively. The heart was found slightly out of its normal position, and towards the right side. On careful auscultation no murmur could be detected along the course of the aorta, or indeed within the chest at all. Neither could any decided râle be recognised. In the region of the left side of the chest posteriorly, tubular breathing could be distinguished. There were faint vocal fremitus and bronchophony. It was remarkable that there was not the slightest indication of the bellows murmur, either in the region of the heart or along the course of the great vessels, at any stage of this case. There was no dysphagia (although, as it afterwards appeared, nothing would have been more likely to occur under the circumstances). There was no laryngeal stridor. There was no tumefaction above the clavicles. No inordinate cervical pulsations. The respirations ranged from thirty to thirty-eight in the minute. The radial pulse (equal at both wrists) averaged about one hundred. There was no new centre of pulsation established in any part of the chest. There was, in fact, a complete absence of the ordinary symptoms of aortic aneurisms, the absence of anything like murmur being not the least remarkable. Notwithstanding these symptoms, or rather despite of the absence of the indications ordinarily relied on, Dr O'Ferrall unhesitatingly formed his diagnosis of the case, which was, that the left bronchial tube was pressed upon by an intra-thoracic tumour, and, moreover, that that tumour was an aneurism of the aorta. Dr O'Ferrall asserted and maintained this opinion, despite of the absence of the ordinarily received rational symptoms of arterial lesion in the chest, and he observed that he was principally sustained and fortified in his opinion by, *firstly*, the fact of the lancinating and darting pains experienced by the patient, shooting from the mammary region towards the axilla; and, *secondly*, by the peculiar character of the hard and ringing cough. It was true that analogous symptoms might be produced by an intra-thoracic tumour, not aneurismal—a carcinomatous tumour, for instance; but on reviewing the other symptoms and constitutional condition of this man, Dr O'Ferrall found reason, from his own practical experience, to adopt and adhere to the conclusion that the disease was aneurismal. The progress of the disease was watched with great care and attention. Eventually the man died suddenly, after having ejected a small quantity of blood from the mouth.

Post-mortem.—On laying open the thorax, the left lung was found to be in a state of pneumonic solidity. It should be observed that this man had been in an advanced stage of pneumonia at the time of his admission into hospital. A large aneurism was found occupying the transverse portion of the aorta. The aneurismal sac opened by two perforations into the left bronchial tube, against which the aneurismal tumour, previous to its bursting, must have pressed severely. This was really a false aneurism, in the truest acceptation of the term; and this fact rendered more strange the absence of all ordinary indications of its presence during life. In cases of what was termed true aneurism, it was not unusual to find the symptoms obscure and ill-defined; but, in cases like the present, the leading indications were generally found sufficiently marked and evident.

It was truly singular that there had been no symptom of dysphagia in this case; for here was the tumour reflected, and bent over the œsophagus. It was not possible but that there must have been some mechanical obstruction experienced in the act of deglutition; yet the man had never complained of any uneasiness of that kind. It would be seen that the margins of the two perforated apertures, from the sac into the bronchial tube, were edged with fungoid growth. This growth would seem to have become deposited in proportion as the intervening tissues of the aneurismal sac and of the bronchial tube became absorbed by pressure, and likely to give way, as if there had been an effort of nature to retard the fatal bursting of the tumour.

Dr Stokes here exhibited the preparation, pointed out the site of the aneurism, and showed the two apertures whereby the contents of the sac had burst into the left bronchus, causing immediate death.

Dr Stokes observed that cases such as this were of the highest importance. The accurate diagnosis arrived at in this case, under circumstances of great obscurity and difficulty, and subsequently so fully verified, was truly creditable to the sagacity and research of Dr O'Ferrall,—though, indeed, it might be deemed bad taste to compliment one who was himself a master of diagnostic science.

Dr O'Ferrall had dwelt strongly on the indications afforded in this case by the peculiar ringing character of the cough, and that unaccompanied by stridor, loss, or diminution of voice. In his (Dr Stokes') work on "Diseases of the Heart," he had adverted to this symptom of hard ringing cough, as being peculiarly remarkable. A gentleman had been under the care of the late Sir Philip Crampton, his disease being somewhat analogous to the present. There were none of the ordinary physical signs of aneurismal disease about him. This gentleman, during a period of two years, had been repeatedly examined by him, in conjunction with the late Mr Colles. His disease was complicated, involving tubercle of the lung, and also aneurism of the aorta. Now, that gentleman, although the lungs were extensively engaged in tubercular disease, betrayed few symptoms of the extent of the pulmonary mischief; and stranger still, though having a large aneurism of the aorta, he had no dysphagia. There was no inequality of the pulses at the wrists. No secondary centre of pulsation was detected in the chest. The only marked symptom was the peculiar loud, hard, and ringing cough, which, when once heard, is not likely to be again mistaken. Save this alone, all rational symptoms of aneurismal disease were wanting. Yet on *post-mortem* examination an aneurism of the aorta was displayed—the largest he (Dr Stokes) had, perhaps, ever seen. Another case was recorded in the *British Medical Journal* last year. A young man put himself under medical treatment for disease of the chest. He was greatly emaciated and weak, but there were no physical indications of what proved to be his real ailment, save the said hard and ringing cough, and a continuous passive hæmoptysis. The medical gentleman under whose care this patient had placed himself, and who subsequently published a full account of the case, entertained the opinion that the young man's disease was phthisis, but it proved to be a case of aneurism. This gentleman wrote to him, referring to the difficulty he laboured under as to the diagnosis of the disease. There was one feature in the case which might have led to a doubt that it was phthisis. In tubercular phthisis there was nothing of rarer occurrence than continued passive hæmoptysis, which often is met with in cases of intra-thoracic tumour. We might even go farther, so as to form an idea of the nature and character of the tumour from the kind of blood expectorated.

In cases of the "leaking aneurism" of Gairdner, the blood spat up is always arterial, whilst the hæmorrhage peculiar to fungus hæmatodes is venous. But, the surgeon having once witnessed a case of this kind, would be sure on meeting a case similar to form a correct diagnosis as to its true character. The fact was in itself important, and worthy of attention, that the most formidable lesions of the great arterial vessels may exist, and yet without any of the recognised physical signs of such disease being perceptible even on close examination. He might advert to the case of the late Mr Liston; that distinguished man had done him the honour of consulting him. Mr Liston had apparently recovered from a severe hæmorrhage. As might readily be supposed, he entered upon the task of investigating the case with deep anxiety as to the result, and conducted the examination with minute and almost painful accuracy. After a lengthened explanation, he was compelled to come to the conclusion, that there could not be detected in Mr Liston's chest one single sign or symptom of aneurismal lesion, although at the very time the aneurism, the bursting of which terminated his valuable life, was then in an advanced stage of progress towards its fatal termination. The study and practical experience of the medical man tended but to make him more and more cautious in forming his diagnosis in similar cases.—*Dublin Hospital Gazette.*

TWO CASES OF MUSCULAR PALSY: CRUVEILHIER'S DISEASE. BY DR J. T. BANKS.

The subject of the first case was a shoemaker, thirty-four years of age, first admitted into the Whitworth Hospital (Dublin) in June 1858. His family history presented nothing remarkable, and he had himself been healthy till five years before, when he caught cold from sleeping in a damp room, and from that time suffered from pains in the arms, particularly in the right arm. His general health was good, and he was able to work, notwithstanding the pain. For eighteen months, the pains (supposed to be rheumatic) continued uninfluenced by treatment; and he then perceived a weakness of the right thumb, and soon observed that it was becoming numb and wasted. Previously to this he had lived freely; but he now took very large quantities of whiskey, with a view to deadening his uneasy sensations. The fingers, and then the wrist, became weak, and there were cramps and convulsive twitching of the muscles, extending up to the fore-arm. "He was next affected with stiffness and pain in the back of the neck, and also between the shoulders, his head sometimes falling forwards on his chest, particularly after walking any considerable distance. His arms felt as if it were a trouble to him to carry them; but the pain, which had been so severe, completely disappeared with the establishment of the atrophic paralysis. The arms and hands were generally very cold, and the latter livid and moist, but there was at times a marked elevation of temperature of the palsied parts; the sensitiveness to the impression of cold was very remarkable, and as the disease was commencing, the muscles were always more feeble in a cold than in a warm atmosphere. In the parts which were the seat of the paralysis the function of sensation was unimpaired. During a residence of three months in the hospital he was subjected to electro-magnetism, and tonic treatment was at the same time employed. There appeared to be some improvement, particularly in the flexors, which became slightly increased in bulk. For two years the disease progressed, but seems now to be at a stand-still, no new sets of muscles becoming engaged. When brought before the Pathological Society in January of the present year, the following statement was made as to the condition of the muscles and the extent of the wasting palsy.

"The trapezius seems fully developed, but the space beneath it and the cervical vertebræ seems imperfectly filled, as if the deeper muscles of the nape of the neck were atrophied.

"The posterior portion of the deltoid muscle is much atrophied, so that a depression exists over the shoulder-joint posteriorly, whilst the anterior or clavicular portion of the same muscle, which is associated in action with the great pectoral muscle, is unaffected, as is the pectoral muscle itself. The anterior and posterior fold of the axilla are remarkably contrasted, the posterior being ill developed from atrophy of the latissimus dorsi and teres major on both sides. The serratus magnus has also undergone partial atrophy, as evidence of its diminished power is furnished by the remarkable and unnatural projection of the inferior angle of each scapula.

"All the extensors of the fore-arm and hand are symmetrically wasted. The supinators are similarly affected; the power of supination remains, but is manifestly performed by the biceps. The flexors of the hand and fingers are partially atrophied, as are also the pronators; pronation can, however, be performed, but very feebly. The muscles appear to be completely atrophied; a deep hollow exists in the position of the 'ball of the thumb,' and the patient is wholly incapable even of moving the metacarpal bones on the phalanges of either thumb. One deep flexor (flexor pollicis longus) of the left hand retains some power of flexing the distal phalanx.

"A very marked curvature exists in the upper dorsal region; not the sharp angular curve, the result of disease, but a rounded and very decided curve, such as we may suppose to be caused by loss of power of the proper spinal muscles of the dorsal region,—'erectors of the spine.'

"The muscles of the lower extremities are fairly developed, and the man is active and a good walker; a few weeks since he walked ten miles, and performed the distance in two hours and ten minutes.

"With respect to the degree of electric contractility retained by the muscles, it was found that those of the fore-arm, which seemed to be completely wasted, were wholly insensible to the stimulus of a strong electro-magnetic current. The same is true of the left triceps, but the right, which is not so much wasted, slightly obeyed the stimulus. No decided influence was exercised on the latissimus dorsi, but the pectoralis major, which seems to be perfectly intact, was thrown into violent spasms on the application of the balls. The health of the patient seems little altered; he is fairly nourished in all parts uninfluenced by the wasting palsy; his appetite is good, he sleeps well, the urine perfectly normal, but the bowels are always sluggish, never acting unless when he has recourse to purgative medicine."

The subject of the second case was a gentleman sixty-four years of age. He stated that "twenty-four years since the disease commenced after a fall which occurred to him while hunting; his head came in contact with a furze-bush, and he was slightly stunned, but soon recovered. Shortly after this his left leg became weak; and slowly and insidiously, almost imperceptibly, the paralysis advanced, until it attained the extent which the disease now presents. There is complete paralysis with atrophy of the extensors of right wrist; on the left side the like lesion exists, but the paralysis is not complete. The muscles of the ball of each thumb have altogether disappeared; in point of fact, a depression exists between the metacarpal joints, which project in a remarkable manner.

"The left leg is also the seat of the muscular paralysis, measuring four inches less than the right around the calf. In walking he drags the left leg, somewhat after the manner of a person with hemiplegia. The disease progressed for about one year, at the end of which time it had attained its present state, when its onward course was stayed; and apart from the infirmity consequent on the paralysis involving such an extent of the muscular system, the health is good. If the face alone were seen, the observer would probably remark it as indicating the possession of robust health. The intelligence is far above that of ordinary persons, and he performs without difficulty an amount of business such as devolves upon a man who has the management of large property confided to him. As to the accident, he says he felt no ill effects to follow immediately upon it, and an interval of some months existed between it and the onset of the disease; but in seeking a cause for his malady, it was the only one to which it could be attributed. He was under the care of that distinguished surgeon, the late Mr Colles, who took no ordinary interest in his case, observing that it presented some unusual and peculiar features."

In reference to these cases, Dr Banks appends the following interesting remarks:—"Few maladies have enjoyed the distinction of having, to the same extent, taxed the ingenuity of writers in coining new names. Some are, doubtless, unexceptionable, but others are calculated to lead to error; for example, the name given by M. Aran, 'Atrophie musculaire progressive,' is inapplicable to the two cases I have adduced, inasmuch as the disease stands still. Again, the name given by Duchenne, 'Atrophie musculaire avec transformation graisseuse,' and the more comprehensive term adopted by Sandahl, 'Atrophia muscularis paralysans, adiposa, progressiva,' are objectionable; for although the muscles generally undergo fatty degeneration, there are instances in which there is no transformation into fat.

"As to the etiology of 'Cruveilhier's atrophy,' we find that rheumatism seemed to be the determining cause in some cases; and, indeed, Friedberg makes 'myopathia rheumatica' one of the six varieties which he establishes. In some of Bell's cases, exposure to cold, and immersing the arm, flowing with sweat, in cold water, was followed by tremor, and subsequently paralysis with atrophy.

"In the case of the shoemaker now under my care, sleeping in a damp room appeared to be the origin of his ailment. But in him there was another cause, which has been recognised by Darwall, Wachsmuth, and Aran, viz., excessive muscular exertion. It has been observed that the muscles most called into action in certain trades have been the first attacked. The muscles of the shoulders in the man who carries heavy loads, the muscles of the fingers in the needle-woman; and in this case the man informs me that 'the right thumb is the part upon which there is the most distress in shoemaking,' and here the first manifestation of the disease was observed. In forty-one of the seventy-five cases of Sandahl, over-exertion of muscular groups seemed to be the proximate cause.

"The diagnosis of this form of paralysis does not present any difficulty. Two of the diseases with which it might possibly be confounded are, in point of fact, very unlike it,—saturnine paralysis, and the general paralysis of the insane. In the same ward we had two aggravated cases of lead palsy, which enabled us to contrast them; and how unlike they really are, was at once evident. Any one who has ever seen the atrophy of the hands, the '*main en griffe*,' can never confound it with any other form of paralysis. With the general paralysis of the insane it has scarcely a feature in common; the unimpaired intelligence and the amount of atrophy at once distinguish it. In the effect of galvanism we have also a means of diagnosis. Dangerous as is this disease, distressing as it is, often striking down its victim but just before in the possession of robust health, and in the prime of life, often pursuing its onward and destructive course, uninfluenced by remedial measures, still the prognosis should be formed with caution, and we should remember that the disease is in some instances susceptible of cure, and in others the process of degeneration, having proceeded to a certain point, ceases. My two cases are examples of this: in the gentleman, twenty-three years have elapsed, and from the state of his health he bids fair to attain longevity.

"It must be borne in mind that the disease is a 'myopathia,' and that there is no evidence of the nervous centres and the nerves being necessarily implicated; on the contrary, cases have occurred of the most extensive muscular atrophy in which the cerebro-spinal system was free from any lesion.

"Of all the means employed with a view to cure or arrest this disease, electrization has been found most useful. Duchenne bears testimony to the powers of 'Faradization;' fifteen of Sandahl's cases were more or less improved. To give a fair chance, the treatment should be resorted to early. Friedberg combines gymnastic exercise with the electrization; he says, 'the chief remedy for the protracted nutritive disturbance of the muscle consists in stimulating it methodically to contract.' The electric or galvanic agent must be steadily and perseveringly employed, to render success probable.

"After speaking of the frequent failures of electricity, strychnine, the Russian vapour-bath, etc., etc., Romberg says, 'Possibly the persevering use of the waters of Gastein or Wildbad might prove beneficial.' Since writing the above, I perceive that Virchow has found that trichina spiralis produces atrophy of muscle. The researches of this distinguished investigator may throw some light on the pathology of this obscure disease, leading, as they do, to the conclusion that some cases of wasting palsy may be caused by the presence of these parasites in the muscular tissue.

"When opportunities for examination present themselves, the trichina should be sought for by the aid of the microscope."—*Dublin Hospital Gazette.*

PROGRESSIVE MUSCULAR ATROPHY; WITH DISEASE OF THE GREY MATTER OF THE SPINAL CORD. BY M. JULES LUYS.

The following case is interesting, as showing how cases similar to the preceding may sometimes depend upon a central lesion:—

The patient was a man fifty-seven years of age, admitted into the Hospital Lariboisière under the care of M. Hérard, and who presented well-marked atrophy of the muscles of the left hand; the muscles of the fore-arm were correspondingly diminished in volume. There was weakness proportional to the apparent diminution of the muscular element. The hand and fore-arm of the other side presented a scarcely perceptible degree of weakness, and a slight amount of atrophy. The lower limbs were unaffected. The intelligence was perfect. The patient died of an intercurrent pneumonia. On *post-mortem* examination, the brain was found normal. The spinal cord, on a level with and above the brachial enlargement, presented a well-marked atrophy of the anterior roots of the nerves on the left side. These roots were of a greyish colour, and considerably diminished in volume; their consistence was very soft, so that the slightest traction was sufficient to tear them. The anterior roots of five nerves were affected, above and below; the nervous substance retained its normal volume and appearance. The filaments of origin of the corresponding roots of the right side presented also a certain degree of atrophy.

On a careful examination of the structure of the cord, the following peculiarities were observed:—

1st, The enormous development of the capillary system in all that portion of the grey matter which corresponded to the space where the roots of the nerves were atrophied. The vessels, in fact, were literally turgid, and were found to be crammed full of blood globules. The vascular canals coming from the periphery of the cord, and those coming from the central portion, formed a very remarkable anastomotic net-work. In some places the grey matter had completely disappeared, in consequence of the dilatation of the walls of the blood-vessels. Almost everywhere the walls of the blood-vessels were thickened and surrounded by a granular matter, which in some places did not go beyond them, but which in others was found diffused throughout the nervous substance, chiefly in the grey matter. This excessive vascularity was most developed in the left side. There was no trace of it in the dorsal or lumbar portions of the cord. A large quantity of amyloid bodies were remarked in the cellular tissue surrounding the capillaries, and in the central portions of the grey matter.

2d, The nervous elements presented this peculiarity, that in the atrophied anterior roots the contents of the nerve tubes was gone, the walls of the tubes alone being occasionally recognisable. In the anterior cornua of the grey matter, at the situation corresponding to the points of emergence of the anterior roots, the presence of nerve cells, though carefully sought for, could not be made out; all had disappeared, and in their place could only be found a more or less abundant deposition of granular matter, which was probably an exudation from the enormously developed capillaries of these regions. Near the parts where the absence of nerve cells had been remarked, a few of a brownish colour were seen; but all their anastomoses were broken.

These changes were much more apparent in the grey matter of the left side; they were much less marked on the right. The nerve cells of the corresponding posterior regions could not be recognised.

The texture and anatomical elements of the cord in the dural and lumbar regions, were in all respects natural.—*Gazette Médicale de Paris.*

ON DIABETES. BY DR GRIESINGER.

Dr Griesinger having had occasion to treat nine cases of diabetes, of which two were of the variety *insipidus*, has directed especial attention to this complaint. Eight of the cases alluded to proved fatal, and in all *post-mortem* examinations were obtained. In order to draw out as complete a history as possible of this disease, Dr Griesinger has collected, from various sources, 217 sufficiently detailed cases; his conclusions are accordingly based upon 225 observations.

Directing attention, in the first place, to the causes of diabetes, Dr Griesinger narrates two cases where there might be a suspicion that the disease had been produced by the excessive use of sugar, or of saccharine aliment. A diet too exclusively vegetable, and especially if containing much starchy matter, exercises a marked influence on the production of diabetes. In one case the disease seems to have been produced by a fall: in reference to this mode of causation, Dr Griesinger found, on analysis of his 225 cases, that in 20 the disease appeared to have had a traumatic origin. In these cases the disease should rather be ascribed to the general shock to the system, than to any special cerebral lesion.

The disease was found to be distributed between the sexes in the following proportions: out of 225 cases, 172 men (76·4 per cent.) and 53 women (23·5 per cent.) were affected. With regard to age, Dr Griesinger confirms the general opinion with regard to the rarity of the diseases in childhood and in old age; the period when diabetes is most common in either sex is from 20 to 40.

In the majority of cases, tuberculosis supervenes after the disease has existed a certain time. Dr Griesinger has also observed among diabetic patients a great tendency to inflammations, accompanied with suppuration or gangrene. A constant diminution in the animal temperature was noticed several times. Dr Griesinger attributes this diminution to an insufficiency of nutrition. In one case the presence of sugar in the urine and in the sweat was found to alternate.

Since the interesting researches of Claude Bernard on the function of the liver, the opinion has been advanced that diabetes might depend upon hypertrophy of this organ. But this opinion is contradicted by an appeal to facts; for in only one case was the liver found to be a little increased in size, and here there had been no hepatic symptoms during life, and after death no large quantity of sugar was found in the organ. It may be stated generally, that the progress of the disease appears to afford little support to the theory which ascribes the production of diabetes principally to the liver. Dr Griesinger seems disposed to admit that the disease is due to a derangement of the digestive functions, which itself is subordinate to a lesion of innervation. The kidneys were not found to present any marked alteration from the healthy condition. In fact, the result of the *post-mortem* examinations would lead to the belief that diabetes is rather a functional derangement, than an affection produced by a special organic disease.

In reference to treatment, Dr Griesinger shows the good effects of alkalies, particularly of bicarbonate of soda, administered sometimes to the extent of half an ounce a day. The author has endeavoured to discover what influence other substances exert upon the progress of the disease. Acids augment the quantity of sugar, so do alcoholic liquids. Yeast has been administered, but with no good effect. Attempts have also been made to facilitate the oxidation of the sugar by the inhalation of oxygen, of chlorine, and of ozone, but without success.

The author investigated the point, as to whether diabetic patients may be allowed to drink as much as their thirst prompts them, or whether it is better to cut off a portion. He found that water, taken in large quantity, certainly augments the quantity of urine and of sugar; that a slight diminution produces no effect; that privation from liquids produces a prompt diminution in the amount of sugar; but that the effect of privation is quite temporary, for as soon as the patient has fully quenched his thirst, he passes in the urine large quantities of sugar.

Consequently, Dr Griesinger concludes that alkaline remedies and an animal diet are the only means at the disposal of the physician in the treatment of this intractable disorder.—*Archiv. für Physiologische Heilkunde*, and *Gazette Médicale de Paris.*

CATARACT IN DIABETES. BY M. GRAEFE.

It would appear from an article by M. Graefe, in the *Deutsche Klinik*, that this surgeon thinks diabetes very frequently the cause of cataract. He examined very carefully, during a journey, a great number of diabetic patients under treatment at different hospitals, and noticed that about one-fourth of these patients were affected with cataract. This proportion, M. Graefe states, has also been noted by a great many physicians who have had diabetic patients under their care. It has likewise been observed that both young and old subjects, labouring under diabetes, suffer from cataract, so that the supposition of mere coincidence cannot be entertained. With the young, the soft cataract has been mostly noticed. M. Graefe extracted three times by the linear incision, with favourable results.

ON INFLUENZA. BY M. LEGRAND.

Influenza (*La Grippe*) is considered by M. Legrand to be a much more important disease than it is commonly regarded. Its general history, anatomical changes, etiology, symptoms, nature, complications, progress, termination, and treatment, are discussed, not according to the views of any one in particular, but according to his own personal experience in the matter. Slight epidemics, such as occur every year, are, he thinks, overlooked, and only severe forms of the disease, occasionally becoming the prevailing type, have ever had any attention bestowed upon them.

M. Legrand, in his practice, directs his principal care towards the relief of the bronchitic and gastric symptoms manifesting themselves in this disease. The old-established and popular mode of treatment in catarrhal disorders, which consists in the copious application, towards midnight, of greasy matters to the surface of the nose, is one of the remedies recommended; this being, in the view of Professor Piorry, in whose wards M. Legrand is *chef de clinique*, a remedy capable of arresting the advance of inflammation along the nasal cavity. To combat persistent cough, M. Legrand has recourse to what he terms *Emplatre* *du pauvre homme*, another domestic favourite in this country. And, for a commencing or a departing influenza, M. Legrand sets down, as "the most sovereign thing on earth," turpentine, externally and internally.—*Gazette Médicale des Hôpitaux.*

SURGERY.

INSUFFICIENCY OF CAUTERIZATION OF PRIMARY SORES TO PREVENT CONSTITUTIONAL SYPHILIS.

M. Diday has burned his false gods, and will no longer burn infecting chancres at the outset, in the hope of preventing constitutional syphilis. To the observations already published by him, and proving in a decisive manner the inefficiency of cauterization to avert the constitutional disease, even when the cauterization has been performed most promptly, and apparently most effectually, the following new facts must be added:—

A small chancre of the prepuce, of three days' duration, was carefully cauterized; nine days afterwards, an apparently healthy cicatrix had formed. Six weeks afterwards there was a copious secondary syphilitic eruption. A chancre, of two days' date, was cauterized for the period of two hours with chloride of zinc paste. Eight days afterwards the ulcer was cured, but not the constitutional disease, of which the symptoms manifested themselves six weeks from the time of appearance of the primary sore.

Cauterization at the end of *twenty-four hours* is not more effectual. A chancre having only existed for that time was cauterized on the 14th of October, and on the 26th of November the patient was covered with a papular eruption. Thus, according to M. Diday, the infecting chancre is not, on its first appearance, a mere local disease. To destroy it, is not to prevent, not even to retard, the manifestation of constitutional symptoms. May this truth become generally known! A certainty that nothing is capable of cutting short syphilis when once commenced, that early cauterization is of no use, would be the best means of deterring the public from exposing themselves to those risks which they only look upon so lightly because they have a more implicit faith in the preventive powers of caustics than the medical profession now has.—*Gazette Médicale de Lyon, and Revue de Therapeutique Medico-Chirurgicale.*

[It may be proper to state that, by the term *infecting* chancre, employed by many of the French writers on syphilis, is meant that form of sore which is considered to be inevitably followed by constitutional symptoms, the Hunterian or indurated chancre of British writers. This is considered by Ricord and his followers to be the only form of true syphilis; other chancres (called *chancroid* by some modern syphilographs) being looked upon as mere local affections, not as forms of true syphilis.

We are by no means convinced by M. Diday's cases of the impossibility of cutting short a true chancre by cauterization. The difficulty, however, of deciding the point consists in this: at the time when cauterization is likely to be successful, it is generally impossible to tell what form the chancre may subsequently assume, for it is quite useless if delayed until the specific induration manifests itself; this induration being, in fact, the first of the constitutional symptoms. Consequently, out of a given number of cases submitted to the ectrotic treatment, we cannot say how many might have turned out indurated chancres, how many simple sores. We do not consider that M. Diday is justified in taking for granted that all the cases in which cauterization succeeds are of the latter class, and that it fails in all of the former. A point which may be of value in determining the diagnosis is the period of incubation, which it has been noticed is generally more prolonged in the case of the indurated than of the simple chancre.—Ed. *Ed. Med. Journal.*]

INTRODUCTION OF A FOREIGN BODY INTO THE RECTUM. BY DR F. RAFFY.

The subject of the present observation had suffered for twelve days from an intermittent hæmorrhage from the anus. According to his own statement, the bleeding had supervened as the result of a violent effort. When M. Raffy saw him the hæmorrhage was very abundant, the patient was in a state of extreme anæmia, and complained of most violent pains in the anus and rectum. He positively denied having swallowed or introduced into the rectum any foreign body. The sphincter ani was strongly contracted; nevertheless, the finger was introduced into the rectum, when it impinged upon a hard and elongated body. The powerful contraction of the sphincter rendered all attempts at extraction unavailing.

M. Raffy then divided the sphincter with a bistouri, and the finger was then introduced completely into the rectum. The foreign body was hard, of an elongated shape, and smooth surface, and appeared to be implanted in one of the folds of the mucous membrane. With considerable exertion, by means of two fingers, a piece of wood as thick as the little finger was dragged out, but could not be brought more than half an inch beyond the anus. This end being held securely by an assistant, M. Raffy passed his index finger along the piece of wood, until he came upon another piece, which appeared to be articulated at an acute angle with the first. After much difficulty this was disengaged and brought into the axis of the rectum. The two branches were then brought together, and a perfect wooden fork, with the limbs quite intact, was withdrawn. Each of the two branches was as thick as the little finger, and about three inches in length. The extraction of this body was followed by a considerable hæmorrhage, which did not, however, last long. The patient recovered after a tedious convalescence. It would appear that this man had introduced the body in question in order to favour the expulsion of indurated fœcal matter, but that a feeling of shame had prevented him from confessing the cause of his sufferings.—*Journal de Médicine de Toulouse*, *and Gazette Hebdomadaire.*

FOREIGN BODIES IN THE URINARY BLADDER. BY M. CIVIALE.

M. Civiale brought before the Academy of Medicine, Paris, a singular case which had come under his care in the Necker Hospital.

On the 26th September 1859, a woman, 49 years of age, suddenly experienced severe pain, occasioned by the presence of a calculus in the urethra. The calculus was broken and partly extracted, the remainder was expelled with the urine. A month afterwards she was again attacked with severe pain, occasioned by retention of urine, which was caused by the impaction in the urethra of a mass of hairs agglomerated together, and covered over with a soft, earthy matter. Fourteen days afterwards, the permanent symptoms of stone manifested themselves. She was admitted into the hospital on the 28th of April last, in a state of great prostration, occasioned by pain and loss of sleep. She was operated upon on the 3d of May. A friable stone of considerable size was seized and crushed; but in closing the instrument in order to withdraw it, M. Civiale recognised the presence of another body more resistant than the stone, and of smaller size. He did not endeavour to crush it; but having assured himself that it did not project beyond the blade of the instrument, so as to endanger wounding the urethra, he removed it without difficulty, when it proved to be a small human tooth. No unpleasant symptom occurred, and the patient passed numerous small portions of the calculus. On the 8th of May several large fragments presented themselves at the internal orifice of the urethra, and were extracted. On the 12th, the operation of lithotrity was repeated, and on this occasion two more teeth were extracted, as well as a large quantity of calculous matter. On the 14th, the patient experienced pain in making water; by means of a peculiar instrument, M. Civiale withdrew a portion of bone, another tooth, and a mass of calculous matter, the appearance of which would from its size have been alarming, were it not for what is known of the dilatability of the urethra in the female. From this date the pains ceased, and the health of the patient was re-established in a marvellously short time.

M. Robin examined the bones, the teeth, and the hair removed from the bladder of this woman, and recognised them to be the remains of a fœtus, coming from a cyst which communicated with the urinary bladder.

In other cases, hairs found in the bladder have come from the pubis, having passed along the urethra. M. Civiale has operated upon eleven patients, in whose bladders were found pieces of straw, bits of grass, pease, haricot beans, ears of corn, a piece of cotton wick, etc. The most singular of these cases was that of a man, from whom was removed a stone of considerable size, which had for its nucleus a small medal upwards of an inch in length, and about half that in breadth. This man informed M. Civiale, that, having drank too freely, he had fallen asleep near a washing establishment, and that the washerwomen had introduced into his urethra this medal, which had been worn by one of them. M. Civiale remarked, that as soon as a foreign body has remained for a short time in the bladder, the urine takes on the phosphatic character, a circumstance which explains the rapid formation of the mineral crust which surrounds the foreign body.

In all these cases lithotrity is the only rational means of treatment, but its application requires great precaution, careful manipulation, and often the use of peculiar instruments. In the case of an individual who had introduced into his bladder the handle of a brush nearly three inches long, M. Civiale made several ineffectual attempts to remove it, and at last succeeded by using an instrument with cutting blades. In another case, where the body introduced was a glass thermometer tube, the tube was seized by one end, but it broke; and after having removed a piece about an inch long, M. Civiale made the extraction of sixteen fragments, into which the other portion had been broken.—*Journal de Médicine et de Chirurgie Pratique.*

ON THE REMOVAL OF GRAINS OF GUNPOWDER FROM BELOW THE SKIN.

BY M. BUSCH.

It sometimes happens that particles of gunpowder lodge themselves below the skin, and produce a sort of tatooing which cannot be got rid of without picking out the grains of gunpowder one by one with a needle.

M. Busch having seen freckles disappear after the application of a strong solution of corrosive sublimate, a substance which gives rise to an eczematous inflammation of the skin, thought that the same method might be effectual in removing the particles of gunpowder. Accordingly, he put his idea in execution, and found it effectual. He makes use of a solution containing five grains of corrosive sublimate to an ounce of water, applies it to the skin for several hours, and renews it daily until eczema is produced. A crust at length forms, and when this is removed, the grains of gunpowder are seen to be adherent to its inner surface. M. Busch recommends that this treatment should be resorted to as soon as possible, in order not to give the particles time to become deeply imbedded below the skin.—*Gazette Médicale de Paris.*

ON LIGATURE OF THE COMMON ILIAC ARTERY. BY DR STEPHEN SMITH, NEW YORK.

Dr Smith having recently tied the common iliac artery for aneurism of the external iliac, has directed special attention to the history of the operation. He has collected from the various medical periodicals thirty-two cases in which the operation was performed, and in the paper before us has given abstracts of these cases. Of the thirty-two cases recorded, there occurred in the United States, 15; in England, 5; in Ireland, 1; in Scotland, 4; in South America, 2; in France, 2; in Germany, 1; in Russia, 2. We give briefly some of Dr Smith's conclusions.

Sex.—Of thirty-two cases of ligature of the common iliac, twenty-seven occurred in males, three in females; in two the sex is not stated.

Age.—The following table classifies the cases in which the age was known:—

Under 1 year,	1	Between 30 and 40,	10
Between 1 and 10,	1	,, 40 ,, 50,	6
,, 20 ,, 30,	6	,, 50 ,, 60,	3

Disease.—In twenty-four cases, aneurisms directly or indirectly led to the operation. The tumours involved the following arteries: right external iliac, 11; left external iliac, 7; femoral, 1; gluteal, 2; varicose, 1; not stated, 2. In four cases a malignant tumour was mistaken for an aneurism. The operation was performed three times to arrest hæmorrhage, not connected with an aneurism, and once as preparatory to the removal of a large malignant tumour of the femur.

Mortality.—Of thirty-two cases, twenty-five died and seven recovered, being a mortality of about 78⅛ per cent. (The mortality, after ligature of the *external* iliac, is about 28 per cent.) Dr Smith considers that the success of the operation has generally been greatly overrated. Thus Erichsen remarks, "When we look at the depth at which this artery is situated, its great size, and proximity to the centre of the circulation, and consider the force with which the blood rushes through it, we cannot but be struck with the success which has attended its ligature. Of seventeen cases in which it has been tried, nine were cured, and eight died;" while Professor Gross says, "The artery has been secured in about twenty cases, of which nearly two-thirds have terminated successfully."

In twelve cases, the date at which the ligature came away is given: the longest period was thirty-six days, and the shortest eight days; the average being nearly twenty-three days. (An examination of fifty cases of ligature of the *external* iliac gives an average of twenty-two days for the separation of the ligature.) An important distinction must be made between the successful and unsuccessful cases, in regard to this point. In the successful, the ligature was much longer retained than in the fatal cases. For the former class the average period of retention of the ligature is about twenty-seven days, while for the latter it is but seventeen days; thus leading to the important inference, that the early separation of the ligature is an indication of danger from hæmorrhage.

In nine cases the peritoneum was wounded; of these, but one recovered. In four cases it was freely opened, no special effort having been made to pierce the membrane; in the remaining cases the wound was accidental, and every precaution had been taken to prevent its occurrence. It appears, therefore, that although a wound of the peritoneum may not necessarily cause a fatal result, it is a very serious complication, and one that should be carefully avoided.

Dr Smith recommends the following plan of operative procedure:—Commence the incision just anterior to the extremity of the second false rib (eleventh), and terminate it just above the internal ring, by a sharp curve inward of one inch; this incision will be about seven inches in length, and will pass about an inch and a half within the anterior spinous process; the curve at the lower extremity will allow the most perfect freedom in the elevation of the peritoneum, and the complete exposure of the artery.—*American Journal of the Medical Sciences*, July 1860.

ON THE UNION OF FRACTURES IN MERCURIO-SYPHILITIC PATIENTS. BY PROFESSOR SIGMUND OF VIENNA.

A young man in the Hospital of Vienna, while undergoing treatment by means of mercurial inunctions, on account of syphilitic ulcers of the skin, and affection of the bones, met with an injury; as the result of which, he sustained an oblique fracture of the humerus about an inch below the tuberosities, accompanied with considerable contusion of the soft parts, and extravasation of blood. Cold applications were made use of, and the arm was put up in splints in the usual way; no unpleasant symptom occurred, and consolidation of the fractured bone was complete on the thirty-third day from the receipt of the injury. Around the united ends of the bone there was a very considerable bony swelling; in other respects, the form and direction of the limb were quite normal. On the day when the fracture was sustained, the patient had undergone the ninth of a series of fifty mercurial inunctions; this treatment was not discontinued, but was carried on uninterruptedly until the disappearance of the syphilitic symptoms.

Professor Sigmund has met with five cases where syphilitic patients have sustained fractures while undergoing mercurial treatment. The bones broken in these cases were, the right radius (twice), the left fibula, the left clavicle, and the left humerus. Complete union of the fractured bones had occurred on the 23d, the 26th, the 30th, the 22d, and the 34th days respectively. In all these cases the results were satisfactory. In none of these cases was the mercurial treatment discontinued, nor was any change made in the diet of the patients.

It is well known that in syphilitic patients no important deviation from the normal course occurs in the healing of wounds of the soft parts. Professor Sigmund has had occasion to perform numerous and various operations in the syphilitic, and his observations entirely confirm the general opinion.

Professor Sigmund does not believe that the bones of syphilitic patients, whether or not they have been treated with mercury, are more readily fractured than the bones of those who have not had syphilis, and have not taken mercury. —*Zeitschrift der k. k. Gesellschaft der Aerzte zu Wien*, 9th July 1850.

HYGIENE.

CURE OF THE DEAF AND DUMB.

Considerable interest has been excited in the Parisian scientific world, by the alleged successful treatment, by a lady, of several deaf and dumb children. The facts, as detailed in the *Gazette des Hôpitaux* and other Journals, appear to be the following:—About the month of August 1855, Mdlle. Cléret, a private teacher, residing in a populous locality in the suburbs of Paris, asked assistance from the Minister of Public Instruction, founding her request, among other motives, upon her discovery of a method of restoring hearing to the deaf and dumb. This means, discovered by chance, she had successfully employed in a number of cases, after having proved its efficacy on herself; it consists in pouring into the ear 4, 5, 6, or 8 drops of sulphuric ether every day. After using this for 15 or 20 days, in order that its energy might be maintained, its use is suspended for a day or two, and then recommenced, when its application may be continued for a very long time, if not for an indefinite period. A committee —comprehending, as medical men, M. Lélut, president; MM. Bérard and Béhier—was appointed to investigate the matter. This duty they executed with much attention, when Mdlle. Cléret was attacked with a severe illness. Having waited without much hope of her recovery, they have reported on it as being a subject as yet undecided. The following facts have been observed by them: Twenty-nine children have been treated in this manner with advantage. Two of these, who had been examined by the committee, were completely cured. Seven children, never previously under any treatment, completely deaf and dumb, have all, especially four of them, after eight or nine months, manifested very remarkable improvement; noise and the sound of the voice being quite perceptible to them. The reporter of the committee has taken care to add, that the greatest caution had been taken to avoid all cause of error, and to prevent any illusion which might result from perceptions obtained through the other senses. Nor is this all. The committee, wishing to increase the opportunities to study the means used by Mdlle. Cléret, and desiring especially to examine other children besides those exclusively confided to this lady, deputed one of its members to take under his own care, patients to be treated according to Mdlle. Cléret's method. Nearly twenty persons were entrusted to him, principally deaf and dumb children, and some old people, whose hearing was impaired, or only existed on one side. In all these cases the result has been very remarkable. Convalescents from typhus fever have had their hearing restored by the same means. In conclusion, with the exception of two or three children, attested by authentic certificates, as deaf and dumb, and who hear well, the committee has established only some incomplete results of experiments begun and not finished, some manifest improvements definite. Such experiments are, no doubt, however, so far unsatisfactory; and, with every confidence in the report, we must regard its imperfect nature as a reason for suspending any opinion on the matter until we can be furnished with evidence of a more complete and perfect nature.

Case by Dr Lafargue.—I took under my care a deaf and dumb boy, eight years of age. The treatment was commenced on the 27th of April last. Every day I dropt into each of his ears eight drops of rectified sulphuric ether. At first, pain was experienced in the right ear, and the amount introduced into it was reduced to four drops; but, since then, a tolerance of the remedy has been established. I now use eight drops for each ear. The improvement was almost instantaneous. At the end of two or three days the little patient began to say, "Papa," "Mamma," "Aunt," etc.; but, singularly, he pronounced all these words in a low tone. The articulation of the sounds will, no doubt, be an education of the hearing. The child hears the sound of a bell, the striking of a clock, etc. These unusual sounds interest and amuse him much. He hears better with the right than the left ear; and as the former is the organ in which pain was at first chiefly complained of, I have been led to ask myself if the curative action is proportional to the physiological effect. Experience alone can answer the question.—*Revue Médico-Chirurgicale.*

In an article on the same subject, contained in the August number of the *Journal de Médicine et de Chirurgie Pratiques*, we find the following remarks:—

Some doubts having been expressed regarding the innocuousness of the treatment by ether, we requested Dr Béhier to tell us if the patients examined by the commission, of which he was convener, had had reason to complain of the treatment.

"By no means," replied M. Béhier. "On the contrary, we saw deaf and dumb children, perfect little savages before the treatment, become tractable and obedient as soon as the improvement of their deafness began to make them amenable to direction. Ether is a purely empirical remedy. When is this agent useful? when is it not? These are questions which I cannot answer. All I know is, that the only unfortunate result I have seen from its use has been its failure in certain cases. It causes a little pain; it is sometimes badly borne; in these cases it is sufficient to employ it at longer intervals. Although I do not use the remedy in my own practice, I could cite four new cases of complete deafness cured by the instillation of ether since the publication of my report."

M. Fonssagrives has not as yet published the result of his experiments; but some other practitioners, in reply to the appeal of Dr Debout, have published a certain number of cases, which are, on the whole, favourable to the remedy of Mdlle. Cléret.

Still, we persist in the belief that ether will not realise the exaggerated expectations which have been entertained regarding it. If it only relieve deafness by dissolving the cerumen which encrusts the membrana tympani, it can only act by relieving a morbid condition hitherto unknown, and which unfortunately, to judge from certain statistics furnished us by Dr Triquet, aurist in Paris, is not the most common cause of deafness.

Up to the 18th of July, M. Triquet had treated by ether 110 patients (rich and poor) affected, some with chronic catarrh of the middle ear, others with nervous deafness—all *deaf*, be it well understood, and subject to ringing in the ears. In all these cases, care had been taken to test the power of hearing before and after the treatment. The result has been this:—The patients have been treated with 30 to 40 drops of ether every three, five, or seven days, rarely every day. There has always been immediate pain, without consecutive amelioration; far from it,—the deafness and the ringing in the ears have augmented progressively with the number of instillations. In twenty cases the pain and redness of the auditory canal have been so violent as to have necessitated the employment of antiphlogistics. The patients (women) have suffered from headache, which has continued for weeks, and deprived them of sleep, although the treatment was suspended on the very day that the headache was experienced.

M. Triquet had thought, as the result of his first trials, that ether might be used without inconvenience to dissolve ceruminous concretions; but he is now forced to confess that, even in these cases, its uses may occasion accidents, such as otitis, with considerable swelling of the lining membrane of the auditory meatus.

On the whole, the instillation of ether in the case of 110 patients, made with all possible precaution, has not produced, according to Dr Triquet, any perceptible amelioration, and in a considerable proportion has manifestly aggravated the condition of the patients. The author may, no doubt, be reproached with having unconsciously, in his character of specialist, deepened the shadows in the above picture; but, even charging to the account of individual susceptibility the accidents attributed to ether, we must still see here a list of 110 failures out of 110 patients. This result, it must be allowed, is not encouraging; and there is much reason to apprehend that M. Menière only expressed the truth in writing to M. Debout, that a belief in the efficacy of ether to cure deafness was one of those generous dreams which pass away with the morning light.

IMPERIAL ASYLUM AT VINCENNES FOR CONVALESCENT WORKMEN.

The *Moniteur Universel* of the 9th July contains an interesting account of the convalescent hospital, established by the Emperor of the French, in the neighbourhood of Paris, from which we extract the following particulars:—

The Asylum of Vincennes was founded by a decree of the 8th March 1855, for the temporary reception, during their convalescence, of workmen who had received injuries or contracted diseases. The building having been finished, and the internal arrangements completed, the inauguration of the Imperial Asylum took place on the 31st of August 1857. It has now been in operation for nearly three years.

Nearly forty acres of forest, belonging to the domains of the Crown, were consecrated to the Asylum, which is built upon an elevated terrace, freely exposed to the air from all quarters. Since the opening of the institution, up to the end of June 1860 (comprehending a period of two years and ten months), the number of convalescents admitted has amounted to 14,000. These convalescents belong to the following categories:—1st, Convalescents sent from the hospitals of Paris and the suburbs; 2d, Convalescents sent by the local charitable institutions of the city (*Bureaux de Bienfaisance*); 3d, Convalescents from injuries received in the public works; 4th, Members of societies of workmen established for their mutual assistance; 5th, Workmen belonging to establishments, the directors of which have obtained from the Minister of the Interior authorization to send, on payment of a subscription, their convalescents to the Asylum, such as the railroads, gasworks, and some large private establishments; 6th, Workmen who have been treated at their own homes, and who have received from their medical attendant a certificate of convalescence.

It is by the express orders of the Emperor that the Asylum is now open, without distinction, to every convalescent workman. There are at present 411 beds.

Two elegant vehicles are attached to the institution, and bear the imperial arms. One of these is of the same size as an ordinary omnibus, the other is somewhat smaller. Every day one or other of these vehicles, according to the number requiring removal, goes to the various hospitals to pick up the convalescents, and even goes to the residences of those who have been treated at their own homes. The same vehicles convey the inmates back to Paris when they leave the Asylum. The first time that the large omnibus stopt in front of the Hôtel-Dieu a crowd of spectators speedily assembled; people asked one another what could be the meaning of this elegant vehicle with the imperial arms in such a locality; but when the spectators saw the poor convalescents, weakened by disease, come out of the hospital and get into the omnibus, and when it was known that they were about to be conveyed to the Imperial Asylum, they broke out into hearty applause. How, in fact, could they help being affected on seeing the paternal cares of the Emperor lavished indiscriminately on all the workmen, on all the laborious classes?

The mean term of residence in the Asylum is 22 days. Thanks to the hygienic resources of the institution, the period of convalescence from fevers is comparatively short. The principle of the Asylum is, that every convalescent shall remain in the Asylum until he is completely restored to health, or until his disease has been recognised as incurable.

Diet of the Institution.—The diet is regulated by the Director, and by the superintending medical officer of the establishment. Care has been taken to fix the hours of the different meals, in conformity with the usual habits of the working classes. At half-past seven in the morning the inmates get a bowl of soup. Breakfast is at half-past ten, and consists of stewed meat and vegetables. Five o'clock is the dinner hour: this meal consists of soup, roast meat, and vegetables. Each convalescent receives daily about a pint of wine, and as much bread of the first quality as he desires. On the average, each inmate consumes daily about a pound and a half of bread. If necessary, a special dietary is prescribed in particular cases. The sum allotted for the food of each inmate is tenpence-halfpenny a day, not comprehending the general expenses of the establishment.

If the convalescents desire it, and if their strength permits, they are employed in various capacities about the establishment, under the direction of the gardener, the smith, the carpenter, etc. In this case, they receive a small sum of money and half a pint of wine in addition to the regular allowance. Those of the inmates who do not work have various amusements provided for them, such as bowls, skittles, dominoes, etc.; cards are prohibited.

The library is open daily, and contains 4000 volumes, and illustrated newspapers. Most of the volumes have been presented by the booksellers of Paris. In general, about 50 readers may be found in the library at a time; on one occasion 96 were counted.

The conduct of all in the Asylum is exemplary. They submit without a word to the rules of the institution, are courteous to one another, take care of the furniture of the establishment and of the flowers in the garden, and keep their dormitories in a state of perfect cleanliness. Although not required, the majority of the inmates attend chapel on Sunday.

The staff of the establishment consists of a director, a treasurer, a medical superintendent, with three resident pupils; six Sisters of the Order of the Ladies of St Augustine of Belgium; a secretary and five clerks; a storekeeper; four overseers; and at least forty persons in subordinate positions, such as cooks, grooms, gardeners, etc.

An infirmary is connected with the Asylum. During the years 1858, 1859, nearly 1100 patients, presenting various affections more or less severe, have been under treatment; during this time only 30 deaths occurred.

The anticipated expenses for the present year are between fourteen and fifteen thousand pounds.

ON SEA SICKNESS. BY DR ARMAND.

Dr Armand, after describing the phenomena of this most unpleasant condition, proceeds to give his views of its causation. After rejecting various hypotheses as untenable, he continues:—When any one waltzes for the first time, it seldom happens that the apparent turning round of surrounding objects does not produce such a degree of vertigo as to cause him to stumble, or even to fall down, while there is a tendency to nausea; in fact, a condition is produced for a short time exactly identical to what is met with, but for a longer time, on board ship in a rough sea. A similar condition is occasioned if we mount and go round upon the wooden horses we meet with at fairs; if, while fording a rapid stream, we allow ourselves to be fascinated by the rapidity of the current; in some people it is produced if they look out of a carriage at the sides of the road, and watch the trees apparently in rapid motion. All these circumstances, including sailing, have this in common, that they give rise to an interference with the laws of perspective, produce perversion of vision, cerebral fatigue, and a whole series of sympathetic phenomena, reacting from the brain upon the stomach and the entire organism. A proof that the fatigue of the eye is in these cases the chief cause of the peculiar feeling is, that, after having waltzed, the most certain means of getting rid of the vertigo is to shut the eyes for an instant; while, on board ship, a pretty sure means of avoiding sea sickness is to look steadily upon one point—a better still is, to lie down and close the eyes.

Sea sickness should not be looked upon as a disease properly so called, but simply as a temporary indisposition, disappearing as one gets accustomed to navigation, except in exceptional cases, where, from a continuance of rough weather, and as the consequence of a peculiar idiosyncrasy, the continuance of this state may give rise to accidents of a certain gravity, such as the vomiting of blood. The obstinacy and the energy of vomiting may have a still worse effect in persons suffering from various kinds of *prolapsus*, or in producing it in those who are predisposed. Pregnancy is an unfavourable condition, as the movements of the vessel and the repeated vomiting not unfrequently bring on premature labour.

The best means, if not of preventing, at least of moderating the violence of sea sickness, is to wear a belt round the body, to assume the horizontal position, and to close the eyes; to suck, from time to time, a peppermint lozenge, or some slices of orange or lemon, which have the effect of moderating the ptyalism, that water in the mouth, which precedes the vomiting. These means succeed in a large number of cases, although it must be confessed that in others they do little or no good.

Dr Armand has employed many of the remedies so pompously announced, but has never met with one which could be called a specific in the proper sense of the word.—*Gazette Médicale de Paris.*

THE PROPOSED GARRISON HOSPITAL AT WOOLWICH.

When the remaining items of the army estimates for the current year were disposed of in the House of Commons on the 18th June, the Secretary for War took occasion to advance the somewhat startling assertion, that "the Government is now building barracks that would make incomparably better hospitals than the generality of the metropolitan ones;" and then, in reply to Mr Monsell, and with reference to one very heavy item in the estimates, Mr Herbert asserted something like the converse of the first proposition, and gave it a special application by saying that a bad hospital, the very worst perhaps in all England, one which has been condemned for years, would make a good barrack. His words were,—"The present hospital at Woolwich is well fitted for barracks." He added, "It is proposed to build a new hospital on a more eligible site for the purpose."

One must be permitted to doubt how far it is at all possible to adapt an involved series of exceedingly small rooms to the requirements, disciplinary and sanitary, of a barrack. What was meant by a "more eligible site" than the present one at Woolwich we are now enabled to understand, as the War Department has concluded, or is about immediately to conclude, the purchase of Kidbrooke Common, with a view to the new hospital being built on it.

This common is a piece of stiff clay land, below Shooter's Hill, and just over against the new vast Greenwich Cemetery. It is so far removed from the barrack from which patients will be supplied to it, that much delay and great inconvenience must of necessity occur when the hospital is moved to this site; and the distance between the two points will also render necessary a supplementary hospital at Woolwich and a double set of officials,—an arrangement which will cause expense, embarrassment, and circumlocution.

It cannot be necessary to say one word more in condemnation of a scheme for the carrying out of which the House of Commons has, with but the faintest breath of inquiry, without a whisper of objection, with no more explanation than the very superficial one quoted, sanctioned an expenditure of L.120,000 of the public money.

What renders this act of supreme folly all the more deplorable, is the fact, which is patent to every one who knows anything of the district, that Government already possesses, in the immediate neighbourhood of the barracks, more than one site—two are at present unoccupied—which, in their soil and surroundings, comply with several of the most imperative sanitary necessities, while they are free from the objections which ought to condemn the proposal to build on Kidbrooke Common.

There can be little doubt that, as soon as many thousand pounds have been expended on this scheme, it will be discovered that a great mistake has been committed, and that there will be much controversy, and the seemingly inevitable array of commissioners and committees. In view of that contingency, the courteous reader is requested to take note that a public and detailed protest, in behalf of common sense and sound sanitation, has been four several times made in these columns.

It cannot be too well remembered that this work will, in magnitude and expense, be second only to the huge blunder at Netley. There is this difference, however, that in the course of the last five years, since it was determined to build at Netley, the sound principles of hospital construction, and the principles which ought to influence the selection of hospital sites, have obtained far greater currency in the public mind. It is understood that one site at Woolwich, in many respects suitable, has been abandoned, because a medical practitioner of great respectability has stated that, in the course of a long practice, he had met with a few cases of ague in the neighbourhood. This is an objection to which it is right to attach a certain degree of importance, but it cannot justify the preference of a site, which all the medical practitioners in the world, which any corporal of sappers, will tell you is one on which an hospital should never be built. Oddly enough, it would appear that the rejected site has been fixed on for the supplementary hospital, which will be rendered necessary by the great distance of the new large one. If one could suppose that Mr Herbert is cognizant of all the bearings of the question, it would seem strange that he should so run counter to all that he has so ably said and done, that he should so "turn his back upon himself." If one could appeal from Mr Herbert in office to Mr Herbert out of office, and if the question were to be settled by the judgment, there cannot be a doubt that the sounder principles would prevail. There may yet be time to retrace an unfortunate and indefensible step.—*The Builder.*

Part Fourth.

MEDICAL NEWS.

QUARTERLY RETURN OF BIRTHS, DEATHS, AND MARRIAGES.

For the purposes of registration, Scotland is at present divided into 995 districts, the population of which, estimated to the middle of 1860, amounts to about 3,152,478 persons; and the present return embraces the number of births, deaths, and marriages which were registered among that population during the quarter ending 30th June 1860. It appears that the population has been in an unhealthy state during the quarter, the deaths having been much above the average of the corresponding quarter of former years, while the births have been below the average. On the other hand, the commercial prosperity of the country, as indicated by the number of marriages, appears to have been improving, seeing that the proportion of marriages has been above the average of former years.

BIRTHS.

28,311 births were registered in Scotland during the second quarter of the year 1860, being 1179 more than during the previous quarter, but 247 fewer births than during the corresponding quarter of last year. Allowing for increase of population, this would indicate an annual proportion of 352 births in every ten thousand, or one birth in every 28 persons,—a proportion below the Scottish average of the corresponding quarter in former years, which indicates 355 births in every ten thousand persons.

The proportion of births in town and country districts varied considerably. Thus, in 125 town districts, which include all the larger towns, and nearly the exact half of the population as at 1851, the number of births was 15,845; while in the remaining 870, or country, districts, the births only numbered 12,466, thus showing an excess of births in the town districts to the extent of 3379. The births in the town districts, therefore, occurred in the proportion of 386 in every ten thousand of the estimated population, or one birth in every 25 persons, while in the rural districts the proportion was 329 births in every ten thousand, or one birth in every 30 persons.

Of the 28,311 births, 25,817 were legitimate, and 2494 illegitimate, which gives the proportion of 8·8 per cent. of the births as illegitimate, or one illegitimate in every 11·3 births. Thus, while in the northern and north-western divisions the illegitimate only amount respectively to 4·9 and 5·8 per cent. of the births, and even in the south-western division (which includes the great manufacturing and mining counties) the proportion is only 7·3 per cent. of the births, in the southern and north-eastern counties (where the population is chiefly engaged in agricultural pursuits) the proportion rises to 12·2 and 13·7 per cent. of the births respectively.

The proportion of illegitimate births in the country districts exceeded that in the town districts, being in the former in the proportion of 9·1 per cent. of the births, or one illegitimate in every 10·9 births; but in the latter in the proportion of 8·5 per cent., or one illegitimate in every 11·7 births.

Of the 28,311 births registered during the quarter, 14,657 were males, and 13,654 females, or about 93 females to every 100 males, which may be considered a rather high male birth rate. Of the births, 9432 were registered during April, 9665 during May, and 9214 during June, thus indicating that

314 births were registered daily during April, 311 during May, and 307 during June.

DEATHS.

18,153 deaths were registered in Scotland during the second quarter of 1860, being 2490 more than during the corresponding quarter of 1859, and many more than during the corresponding quarter of any year since the Registration Act came into operation. The mortality during the quarter has been in the high proportion of 233 deaths annually in every ten thousand of the estimated population, or one death in every 42 persons; the mean of the corresponding quarter of previous years having been only 200 deaths in every ten thousand, or one death in every 50 persons. The whole year, therefore, so far as it has yet gone, has been one of unprecedented mortality.

The deaths in the town districts greatly exceeded those in the country districts. Thus, in the 125 town districts, 11,093 deaths were registered during the quarter, but only 7060 in the 870 rural districts, showing an excess of 4033 deaths in the town districts. From this it appears that, during the quarter, the deaths in the towns were at the annual rate of 270 in every ten thousand of the estimated population, or one death in every 37 persons, while in the rural districts the proportion was 186 deaths in every ten thousand, or one death in every 53 persons.

Of the 18,153 persons whose deaths were registered during the quarter, 8977 were males, and 9176 females. 6524 deaths were registered during April, 6248 during May, and 5381 during June. Hence it appears that 217 deaths were registered daily during April, 201 during May, and 179 during June.

INCREASE OF THE POPULATION.

As the births amounted to 28,311, and the deaths to 18,153, the natural increase of the population amounted to 10,158 persons. From that number, however, have to be deducted the emigrants during the quarter. From a return furnished to the Registrar-General by the Emigration Commissioners, it appears that, during the quarter, 48,626 persons emigrated from the ports of Great Britain and Ireland, of whom 2873 were of Scottish origin. If to these be added 465 as the proportion whose origin were not ascertained, the number of Scottish emigrants during the quarter would amount to 3338, which, deducted from the excess of births over deaths, would show that the actual increase of the population during the quarter, irrespective of immigrants, whose numbers cannot be ascertained, amounted to 6820 persons.

MARRIAGES.

5302 marriages were registered in Scotland during the second quarter of 1860, being 171 more than during the corresponding quarter of 1859, and indicating an annual proportion of 67 marriages in every ten thousand of the estimated population, or one marriage in every 148 persons. This is a proportion higher than the mean of the corresponding quarter of the five previous years, which was only at the rate of 65 marriages in every ten thousand persons.

Of the 5302 marriages, 3186 occurred in the 125 town districts, while only 2116 occurred in the 870 country districts, being an excess of 1070 marriages in the town districts. This shows that, in the town districts, marriage, during the quarter, was contracted at the annual rate of 77 marriages in every ten thousand of the estimated population, or one marriage in every 129 persons; while in the rural districts the proportion was only 56 marriages in every ten thousand, or one marriage in every 177 persons.

1299 marriages were registered in April, 1006 in May, and 2997 in June.

HEALTH OF THE POPULATION.

The past quarter has proved more unhealthy to the population, and has resulted in a greater number of deaths, than any of the corresponding quarters of the five previous years, during which period alone we have had the means of comparing the mortality. Not only has an unusual proportion of aged persons been cut off, but affections of the respiratory organs have been unusually prevalent among all classes, and have largely increased the number of deaths. The excess of deaths, however, cannot be attributed to the prevalence of any fatal epidemic, seeing that during the quarter the only prevalent epidemic has been measles of a very mild type, excepting in those localities, such as Glasgow, where it immediately followed a severe epidemic of small-pox. Attention has been directed to this interesting fact more than once in the *monthly* reports, in which, from specifying the fatal diseases in the eight principal towns, more distinct reference can be made to such facts than in this return. Small-pox still lingers in several localities, but seems to be much less prevalent or fatal than during the former quarter. Hooping-cough was epidemic in Caithness, few districts appearing to be exempt from it; but, with the exception of a few districts in Argyll, Fife, Ayr, Lanark, and Dumfries, it does not appear to be prevalent over Scotland. Scarlet fever, which was rather prevalent in many parts of the country at the beginning of the quarter, was rapidly disappearing; and typhus and gastric fevers were not more common than usual. Several deaths resulted from diphtheria, but, so far as appears, it does not seem to have assumed the epidemic form.

WEATHER.

That the state of the weather in Scotland has more to do with the mortality than any class of diseases, has been again and again noticed in these reports; and the past quarter, indeed the first six months of this year, strikingly illustrate the truth of this statement. Since the Registration Act came into operation in January 1855, there has been no such continued severe weather as during the past six months; and though smart epidemics have prevailed in former years, and no general one of a fatal character during the first six months of this year, the deaths over Scotland during the past six months have been 5575 above the mean of the corresponding months of former years, and those during the second quarter of this year 4796 deaths above the mean of the second quarter of former years. As a whole, the weather during the quarter was colder than usual, with greater alternations of temperature, and with a longer continuance of east winds. Indeed, May presented the striking anomaly of being the finest month of the quarter, with much less east wind than usual, and, consequently, appeared to the senses as if warmer than June. The mean temperature during May was, indeed, one degree above the average, while that of June was 3⅕ degrees below the average of former years; but to the senses, June, though three degrees warmer than May, appeared to be the colder month; and the thermometer, with a blackened ball exposed to the sun, indicated, during the month of June, that the sun's rays received on it were sixteen degrees colder than the mean of the same month in former years, while the humidity of the air was greater by seven degrees. All these circumstances tended to keep the mortality from falling so rapidly as it usually does when the weather is normal. The mortality this year attained its maximum in February, the coldest month, when the daily number of deaths was 238. As the weather, or rather the mean temperature, improved, the deaths slowly fell to 223 daily during March, to 217 daily during April, to 201 daily during May, and to 179 daily during June.

The mean barometric pressure, corrected and reduced to the sea level, was 29·978 inches during April, 29·831 inches during May, and 29·674 inches during June. The mean temperature was 41°·5 during April, 50°·2 during May, and 53°·0 during June. The extreme range of temperature amounted to 32°·2 in April, 35°·5 in May, and 27°·5 during June. The mean daily range of temperature was 14°·9 in April, 15°·0 in May, and 13°·3 in June. Rain, on the average, fell during 10 days in April, 15 days in May, and 18 days in June, with mean depth of 1·18 inches in April, 2·18 inches in May, and 4·34 inches in June. The humidity of the air was 82 in April, 81 in May, and 85 in June.

Winds with an easterly point blew during 12 days in April, 11 days in May, and 14 days in June; while winds with a westerly point blew 9 days during April, 13 days during May, and 9 days during June.

GRADUATION IN MEDICINE AT THE UNIVERSITY OF EDINBURGH.

On the first of August, the annual ceremony of Graduation in Medicine took place in the University of Edinburgh, under the presidence of Sir David Brewster, Principal of the University. The following is the list of Graduates, with the titles of their theses :—

NOMINA EORUM QUI GRADUM MEDICINAE DOCTORIS IN ACADEMIA JACOBI SEXTI REGIS, QUAE EDINBURGI EST, ANNO MDCCCLX ADEPTI SUNT.

*** *Those who have obtained Prizes for their Dissertations.*
** *Those deemed worthy of Competing for the Dissertation Prizes.*
* *Those commended for their Dissertations.*

* Abercrombie, Alexander, a Promontorio Bonæ Spei. On Tubercular Leprosy.
* Allan, Christophorus Jacobus, Anglus. On Diet.
Allan, Jacobus, Orcadensis. On the Functions of the Capillaries.
* Anderson, Gulielmus, Scotus. On Typhus and Typhoid Fevers.
5*** Annandale, Thomas, Anglus. On Injuries of the Hip Joint.
Ballantyne, Alexander, Scotus. On Traumatic Tetanus.
Beaugeard, Horatius Lazare, ab Insula Mauritii (Port Louis). On Tabes Mesenterica.
Bell, Gulielmus Riddall, Hibernus. On the Mutual Relations of the Circulatory and Respiratory Functions in Health and Disease.
** Bonthron, Andreas, Scotus. On Inflammation; the Relation of its Primary Stages to Carbonic Acid.
10 Branch, Gulielmus Joannes, Barbadensis. On Religious Insanity.
Broster, Joannes, Anglus. On Amputation.
Brown, Colville, Scotus. On Syphilis.
* Cowie, Georgius, Scotus. On Infanticide.
Cusworth, Gulielmus Wilson, Anglus. On Diabetes Mellitus.
15*** Dickson, Alexander, Scotus. On the Development of the Flower, and especially the Pistil, in the Caryophyllaceæ.
Erskine, Robertus, Scotus. On the Entozoa.
Fairbairn, Gulielmus Joannes, Scotus. On the Detection of Infanticide.
Hood, Georgius, Scotus. On Acute Rheumatism.
Inglis, Robertus, Scotus. On the Physiology and Pathology of Religious Epidemics.
20 Jones, Joannes Curtis, Americanus. On the Nature and Treatment of Epilepsy.
King, Joannes Henricus Carolus Erridge, Anglus. On Diseases of Articular Cartilage.
Landsberg, Joannes Philippus de, a Promontorio Bonæ Spei. On Hysteria.
Langford, Henricus Eduardus, Anglus. On Ergot of Rye.
Leadam, Gulielmus Ward, Anglus. On the Circulation.
25 Le Déaut, Joannes Etienne Arthurus, ab Insula Mauritii (Port Louis). On the Blood, with Pathological Considerations.
** Little, Robertus, Scotus. On the Climate and Prevailing Diseases of Singapore.
Low, Gulielmus Cook, Anglus. On the Detection of Infanticide.
* Lyell, David, Scotus. Some Observations on the Blood and Animal Heat.
M'Dougall, Jacobus Nairn, Scotus. On Retention of Urine.

30*** M'Intosh, Gulielmus Carmichael, Scotus. Observations and Experiments on the Carcinus Mœnas.
** Maclagan, Robertus Craig, Scotus. On Hyoscyamus niger.
Maclagan, Thomas Joannes, Scotus. On Oxaluria.
M'Master, Valentinus Munbee, V.C., ab India Orientali. On Urinary Calculi.
* Middleton, Jacobus, Scotus. On the Medical Jurisprudence of Muriatic Acid.
35* Monteath, Georgius, Scotus. On the Pathological Relations between the Heart and the Brain.
Moren, Arthurus, a Nova Scotia. On the Causes and Pathology of Epidemic Cholera.
* Murray, Gustavus Carolus Philippus, ab Insula Trinidad. On Morbid Conditions which may be mistaken for Pregnancy.
Nicoll, Joannes Black, Scotus. On the Pathology and Treatment of Tic Doloureux.
* O'Neill, Joannes, Scotus. On Cannabis Indica.
40* Piggott, Gulielmus Cummins, Barbadensis. On Elephantiasis.
Racey, Joannes, Canadensis. On Certain Deposits of Pigment, their Causes, Sources, and Chemical Characters.
Robertson, Gulielmus Borwick, Orcadensis. On Tabes Mesenterica.
Ross, Joannes, Scotus. On the Influence of Mind on Disease.
Rutherford, Gideon, Scotus. On the Mechanism of Natural Labour.
45* Saidler, Jacobus, Scotus. On Mercury, a Chologogue, Antisyphilitic, and Antiphlogistic.
** Scott, Henricus, Anglus. On the History, Botanical and Topographical Sources of Sarsaparilla.
Scott, Gualterus, Scotus. On some of the Diseases of the Pharynx and Œsophagus.
Scott, Gulielmus, Anglus. On Pelvic Cellulitis.
Sheriff, Gulielmus, Anglus. On the Preventive Measures to be employed against Epidemics.
50* Shore, Offley Bohun, Anglus. On Erectile Tumours and their Treatment.
* Sloan, Robertus Stirling, Scotus. On Puerperal Fever.
Spence, Robertus, Scotus. On Natural Labour.
Thom, Joannes Jacobus, Scotus. On Medical Diagnosis.
Thomson, Ebenezer, Scotus. On Diphtheria.
55 Warden, Thomas, Scotus. On Infanticide.
* White, Samuel Gamble, Hibernus. On Variola.
57 Whitefield, Petrus Plenderleith, A.M. Edin., Scotus. On the Homology of Matter and Spirit.

THE ORDINANCES OF THE UNIVERSITIES COMMISSIONERS REGARDING MEDICAL DEGREES.

The Commissioners have made their Report to the Privy Council, in regard to their Ordinances of August 1859 and March 1860, relating to Medical Degrees in the University of Edinburgh, which were petitioned against by the College of Physicians of Edinburgh, the Colleges of Surgeons of England and Edinburgh, and the Glasgow Faculty. The Commissioners adhered to their former judgments in every particular; and expressed a wish that a decision should be come to by the Privy Council without delay, in order that the Ordinances, if approved of, might come into operation next Session. The Privy Council have given notice to the petitioners that they will be heard by counsel, but have decided that the hearing of the case shall be postponed till November.

We understand that Sir Hugh Cairns and Mr Roundell Palmer have been retained for the petitioners.

MEDICAL ACT (1858) AMENDMENT BILL.

This Bill received the Royal assent on the 6th of August. It was printed in full in the July Number of this Journal, in the Minutes of the Medical Council. The Act provides, that the Colleges of Physicians, in the event of their obtaining new Charters, shall not be compelled to change their names unless they choose; and that if they do assume new designations, they shall still retain all their existing rights and privileges. Further, it enables the London College of Physicians to get rid of their Elects and perpetual President. One important change was made while the Bill was passing through Parliament. The fifth clause, which provided for the repeal of that portion of the forty-seventh section of the Medical Act (1858), which compelled the London College, in the event of their obtaining a new Charter, to admit as members all Fellows, Members, or Licentiates of the Edinburgh and Dublin Colleges, on payment of a Registration Fee of Two Pounds, has been omitted, in consequence of the opposition of a number of Licentiates of the two latter Colleges.

GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

Sir James Clark having resigned his seat at the Medical Council, Dr William Baly has been nominated by the Queen to take his place.

DEATH OF DR MARTIN LAMB, H.M.I.M.S.

"It is with deep regret that we have to announce in our obituary of to-day the death of a young townsman, Dr Lamb, of the Indian army, eldest son of David Lamb, Esq., The Latch. Dr Lamb was some time in the surgery of Dr Guthrie, here, and afterwards graduated at the Edinburgh University. After a few years' residence in the south of England, he entered the H.E.I.C.S., and proceeded to India, and soon after his arrival there was appointed to the 3d Regiment of Native Infantry. He afterwards served in the 45th Native Infantry, and was attached to that regiment when it mutinied in 1857,—a year so painfully memorable in the history of our Indian Empire. He received a wound in that disastrous rebellion, which seems to have considerably affected his health."

Such is the brief notice in the *Brechin Advertiser*, of the death of one whose amiability of disposition and sterling excellence of character had secured for him many friends. Martin Lamb was a distinguished student of the University of Edinburgh some fourteen years ago, and took his degree in Medicine in 1847. The same year he was appointed one of the Resident Medical Officers in the Royal Infirmary, and in December 1848 was elected Senior President of the Royal Medical Society. It was in the discharge of the duties of these situations that the high talents and great attainments of Dr Lamb became generally appreciated. He was a good scholar, possessed a thorough knowledge of several European languages, and was unusually well versed, for so young a man, in the literature of his own country. In the Infirmary Dr Lamb was highly esteemed by all his colleagues, than whom none will more unfeignedly mourn his early decease; while to his patients he was endeared by that winning gentleness of manner and invariable kindness which so peculiarly distinguished him. If during his subsequent career in India Dr Lamb did not attain to the eminence which his friends believed he might readily have reached, it is to be remembered that his professional life has been but a short one, while those who knew him best will not be slow to discover another reason, in the singular modesty and retiredness which invariably cloaked his really large attainments.

VARIETIES.

Singular Case of Loss of Sight.—We recently heard a remarkable and touching story of a little boy, the son of a gentleman in an adjoining county. His age is 12 or 13. He is an interesting, promising lad. One day during the past winter he failed to rise in the morning as early as usual. At length his father went into the room where he lay, and asked him why he did not get up. He said it seemed dark yet, and he was waiting for daylight. His father retired, but the boy did not make his appearance for some time; he returned and said a second time, "My son, why don't you get up?" He replied, "Father, is it daylight?" "Yes, long ago." "Then, father," the little fellow said, "I am blind." And so it was; his sight was gone. In a short time his father took him to Nashville, to get the benefit of the medical profession there; but none of the physicians could do anything for him, and happily made no experiments on his eyes. Some ladies in a family of his father's acquaintance sought to cheer him in his affliction, and one night proposed to take him to the opera, that he might hear the music and singing. He went, and was delighted. In the course of the performance, all at once he leaped up, threw his arms around his father's neck, and screamed with ecstasy, "Oh! father, I can see! I can see!" His sight had instantly returned. And since then he has retained it in full vigour, except that under excitement there is sometimes a transient dimness of vision. The case is one of a remarkable and singular character.—*New York Independent.*

Swallowing Teeth.—In the *Dental Cosmos* for March, Dr Foster reports a remarkable accident of swallowing teeth. He says:—"A gentleman of this city (Wilmington), 35 years of age, sanguine temperament, swallowed his artificial teeth at midnight on Wednesday. Physicians were called in, who fished for them, also tried the usual remedies, but all to no purpose. It was then concluded to let Nature take her course (not doubting in the least that *her* course would be *death* to him), when, to the astonishment of all, and his most unbounded delight, after a very painful and laborious stool, he found himself again in the possession of them. This did not take place until the following Monday, making the *round trip* in five days." The plate was quite heavy, to which three teeth were attached.

Singular Case of Loss of the Hair.— —— Corey, a boy aged about ten years, presented himself in my office (Dr Jewett's). Struck with his singular appearance, I requested him to remove his hat, which he did with some reluctance. Not a hair was to be seen—neither had he eyebrows or eyelashes; and upon a critical inspection, not a vestige of down, or even the rudiment of a hair, could be detected upon any part of the body. The lad seemed unusually intelligent for one of his years. He stated that he had enjoyed sound health, having had scarcely a sick day in his life; that when an infant, he had hair like other children; but when four or five years of age, and while in perfect health, it began to fall off, and in a few weeks left him completely hairless. He also stated, that though he exercised much, he never perspired. He said, jocosely, that his mother thought "there were no pores in his skin for the sweat to come out;" and indeed his appearance seemed to justify the old lady's novel conclusion. The scalp, and some parts of the body, exhibited the glossy, polished aspect, presented by the heads of old men who have been bald many years. Nothing like capillary follicles was observable upon any part of the surface; yet the skin was otherwise normal and healthy. —*Boston Med. and Surg. Journal*, June 1860.

Independence Day in New York.—The *American Medical Times* gives a list of the casualties, as copied from the returns of the police, which occurred in the city of New York on the 4th of July 1860. The number recorded is fifty-three, and consists chiefly of gunshot wounds, burns by gunpowder, wounds from the bursting of pistols and powder-flasks, but includes several stabs and other forms of injury. In commenting upon this list, the editor makes the following observations :—" Happy the citizen of New York who rose on the morning of the 5th of July with a whole skin and unbroken bones. Happy they, whose business calling them into the thoroughfares of the great metropolis, and amid the tempestuous atmosphere of our national Saturnalia, were yet permitted to return home with unbandaged heads and unsplintered limbs. The tutelar deities of storm-tossed mariners perilously venturing between Scylla and Charybdis, or threading the channels of the 'roaring Symplegades,' must have tenderly gone in the van of every citizen who thus escaped martyrdom by belching fires and raining fragments of rockets. Go where you might, turn where you would, and troops of boys armed cap-a-pie with every possible variety of detonating instrument, thronged the streets, adding their quota of noise and danger to the general uproar around. Collected in groups at the street corners, each vied with his neighbour in audacity of enterprise—overloading cheap, deceitful pistols, whose every discharge threatened the life and but too often destroyed the limbs of the bystanders, or impertinently thrusting explosive missiles in the faces or under the clothing of the passers-by. Some amused themselves with burning loose gunpowder on the ground; and having converted their pockets into magazines, the latter not unfrequently took fire, and the vagrant patriot suddenly became an unwilling holocaust to the goddess of Independence Day."

WHAT IS A YEAR OF STUDY?—A correspondent writes as follows:—"The question between nine and six months is plainly one of great importance, as regards both the actual amount of education and the attendant expense. In Scotland, for example, the Universities allow attendance on two six months' courses of lectures during the winter session to count as a year of study; while the Royal Colleges and Glasgow Faculty specify four winter and three summer sessions. The six months Boards, therefore, are either underselling the nine months Boards, and requiring too little; or the nine months Boards have overshot the mark, and are requiring too much. One or other must be wrong; and it is to be regretted that the Medical Council, although the proper body to settle the matter, declined to pronounce upon it, although they had declared for 'four years' of professional study, and considered that a fortnight of the session of so much importance, that the student who is later of coming up shall thereby lose his session altogether. When the Council speaks of a 'year' of study, we ought to know what it means. It cannot be mere time, as distinguished from how the time is spent. Time may ripen an apple, but not necessarily a medical student! Nor will a definition founded on the number of lectures attended, meet the case. It is the number of months spent at the medical school which must be defined. To this may be added, if thought necessary, the minimum number of classes to be attended to constitute a session. If the Medical Council thinks six months too little, or nine months too much, let it not be afraid to say so; but let us not have our Medical Council presenting to the profession the ludicrous inconsistency of treating three months as neither here nor there; while it considers a fortnight so precious as to attach to its neglect the penalty of forfeiting the session altogether."

DR CORRIGAN AND THE MEDICAL COUNCIL.—Dr Corrigan writes, that, in our review of the proceedings of the Medical Council, in the last number of the *Journal* (p. 163), we have misapprehended the meaning of his amendment to Dr Andrew Wood's motion on the 21st June, with reference to the period of study to be required of candidates for medical qualifications. Dr Wood's motion was as follows:—"That the four years of professional study shall be held to embrace four winter sessions of six months each, and three summer sessions of three months each." The amendment of Dr Corrigan ran thus:—"That four years of professional study be required after the examination in general education: the fourth professional year being understood to terminate at the end of the summer session of that year." In commenting upon this motion and amendment, we remarked,—"All they (the Minutes) let us know is, that Dr Andrew Wood and Mr Watt in vain moved for the full nine months' study, as a definition of the year; and that Drs Corrigan, Apjohn, and Stokes, endeavoured equally in vain to trim the definition to suit those whom we may guess to be the six months party."

Dr Corrigan informs us, that, by his amendment, he desired to make the period of study extend to four winter and four summer sessions. We have much pleasure in inserting this correction of our previous observations, and in finding that this distinguished physician is one of those who maintain the nine months' definition of a year of study.

PUBLICATIONS RECEIVED.

Beasley — The Pocket Formulary. By Henry Beasley. Seventh Edition. London, 1860.

Braithwaite—Retrospect of Medicine, January to June 1860. Edited by W. Braithwaite. London, 1860.

Camplin—On Diabetes and its Successful Treatment. By John Camplin, M.D., F.L.S. London, 1860.

Chavasse—Advice to a Mother on the Management of Her Offspring. By Pye Henry Chavasse, F.R.C.S., etc. London, 1860.

Combe—On Physiology applied to Health and Education. By Andrew Combe, M.D., etc., etc. New Edition, by James Coxe, M.D., etc. Edinburgh, 1860.

Frerichs—A Clinical Treatise on Diseases of the Liver. By Dr F. Theod. Frerichs. Translated by Charles Murchison, M.D., etc., etc. London, 1860.

The Wife's Domain. By Philothalos. London, 1860.

Garratt—Electro-Physiology and Electro-Therapeutics. By Alfred C. Garratt, M.D., etc., etc. Boston, 1860.

Godfrey—On Spinal Curvatures and Deformities of the Chest and Limbs. By Mrs Godfrey. Third Edition. London, 1860.

Jones—On the Invention of Stereoscopic Glasses for Single Pictures. By T. Wharton Jones, F.R.S., etc., etc. London, 1860.

Kölliker—A Manual of Human Microscopic Anatomy. By A. Kölliker. London, 1860.

Markham—Diseases of the Heart: their Pathology and Treatment. By W. O. Markham, M.D. Second Edition. London, 1860.

Ranking—Half-Yearly Abstract of the Medical Sciences, etc., etc. Edited by W. H. Ranking, M.D., and R. B. Radcliffe, M.D. London, 1860.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*On Delirium Tremens.* By JEFFERY A. MARSTON, M.D., Assistant-Surgeon, Royal Artillery, Malta.

THE following remarks are put upon record with the view of reconsidering the etiology of this disease, its varieties and treatment. The author would be distinctly understood as not upholding the blind routine treatment of it, nor defending from the reprobation it deserves, the practice of giving "15 or 16 grs. of opium in as many hours." There can be no doubt whatever, that many cases (perhaps the larger number) of delirium, arising from the abuse of alcoholic liquors, will and do recover, either spontaneously, or by a simple non-specific treatment. This fact has been long known to the medical officers of both services; but recently a reactionary current has set in strongly against the experience, and remedial measures employed in the disease itself, as well as against the truth of the views of its etiology and pathology, held by our forefathers, and promulgated by our ordinary teachers.

These latter and newer doctrines have gained, and are gaining force, for two reasons—1*st*, Because they are supported by a goodly array of facts, and contain a large amount of truth; 2*d*, On account of the scientific position and celebrity of the men who advocate them. The present age will form a curious episode in medical history; for we have the experience of ages, and theories based upon such experience, tottering before the rude assaults of a more positive school. Already has the therapeutical value of venesection been rudely shaken; and now the ordinary treatment of delirium tremens is impugned, and said to be based upon an erroneous pathology.

The *Medico-Chirurgical Review* for October contains a good resumè of the tenets of the new school, and what I shall take to be a good exposition of the present state of the case. It is not a very pleasant thing to speak of the want of sobriety of one's corps; but I take it, that the men of the Royal Artillery and Engineers drink about as much and deeply as any other corps—and that the ordinary British soldier is not the most sober man, of a not very sober nation, is patent enough to common observation.

First of all, let us see that our terms are precise and clear. I would say that there are three separate and distinct forms of the disease in question: that if any one plan of treatment be pursued in all, and if, without reference to their distinctive features, they be individually and severally heaped together under one head, we can obtain no reliable data. Not a little misconception, it seems to me, has arisen from this very source.

I. Delirium è potu, or Delirium Ebrietatis properly so called.
II. Delirium Ebriosorum.

$$\text{III.}\quad\begin{array}{c}\text{Delirium}\\ \text{complicated}\\ \text{with}\end{array}\left\{\begin{array}{l}\text{Renal}\\ \text{Hepatic}\\ \text{Gastro-Enteric}\\ \text{Cardiac}\\ \text{Central}\end{array}\right\}\text{Diseases.}$$

Professor Todd, in one of his clinical lectures, has some admirable remarks upon the two first forms, and their distinctions. The first I would illustrate thus:—It happens in the younger and more acute drunkards (if I may so term them). The disease follows quickly after a debauch—within 24 or 48 hours. The symptoms are—The tongue very foul and tremulous; great headache; face rather flushed; tenderness often upon pressure of the epigastrium; nausea; sometimes vomiting; perfect anorexia; sleeplessness; tremors; hallucinations; illusions; restlessness; an excited manner; a quick, soft, and tolerably full pulse; and often there is present a smell of spirit. Now, these cases are by far the most frequent. The disease occurs in a man whose means prevent a regular steady soaking, but in one who drinks very hard whenever his pocket allows it. However frequently this may be, there is always a good and distinct interval—weeks or months. The subject of the disease goes in for a heavy night or so at a time—his money is exhausted—he does or does not go to prison, but at any rate he does not drink again for some period, for the best of all reasons—want of means. Here is the ordinary form of the disorder: An acute alcoholism—the drink being *in* the man. An emetic-purgative, with quiet and repose for two or three days, sets him all right again.

The second form is a delirium of drunkards, in contradistinction to a delirium from drink. The illustration of this form will be:—The subjects of it are older—have the outward and visible signs, and bring the history of a habit of drinking; hard drinking indeed, if the aggregate be looked to—the steady weekly consumption of spirits, to wit—but less hard than the first variety in a given space of time. Those men have kept out of the guard-room, and are shrewd enough to keep aloof from their officers; bear a good regimental character; are seldom, if ever, in hospital; and although long suspected in the regiment of being secret drunkards, yet are only proved so by some accident—as turning out at night to a fire—or admission into hospital for some trivial disease. At last he is caught, and lodged in the guard-room; or by some means or other he is with all suddenness deprived of his drink; and delirium tremens sets in, appearing from the second to the seventh day after confinement, while perchance the man is awaiting his court-martial.

In short, you get the history of a man who has drank for years and years; during which time he has performed his duty under sharp supervision, and has not suffered from any disease. He is deprived suddenly of his stimulus, and takes delirium tremens.

Complicated Form.—This variety will take in the various symptoms of any organic disease present, and complicating the case. It would be impossible and needless to enumerate the various complications, further than to remark that their recognition and diagnosis is all-important; the difficulty of their treatment very great; and that the mortality far exceeds that of the other and simpler forms of the disease.

The visceral or glandular derangements become evident for the first time during the attack of delirium tremens—the man never having been before in hospital,—and are then only arrived at, from the fact that some unusual symptoms, as convulsions, jaundice, œdema, persistence and peculiarity of the delirium or albuminous urine, make them apparent.

The treatment of such cases must necessarily be modified according to the diseased state and its indications.

Having premised this much, let us turn to the points in dispute, which appear to be; That the theory of the causation or etiology of the disease hitherto propounded is wrong, its pathology wrongly stated, the indications for its treatment misunderstood, and the special modes of treatment themselves (particularly that by opium and stimulants) have been erroneously and injuriously pursued.

It is often better to watch than to correct, and I would ask how many cases classed under the first form have been enumerated with the second and third varieties? I fancy that by far the larger number of the so-called statistics consists of individual cases of the first form, and if so, the generalization from them cannot fail to be vitiated, when applied to the whole disease.

Dr Watson expressly says, that some cases occur after a long debauch, and others in which the patient has not abstained, but is continually fuddled; and here the disease arises because the man goes from his ordinary positive to the comparative degree.

There is no doubt that those cases are numerous, and their plain inference is "poisoning;" but so much has been made of them, as virtually to exclude the occurrence of other forms.

Etiology.—Taking the objections seriatim, the Etiology; Watson says, the predisposing cause is drink; the exciting cause, the privation of it. Against this view there is urged the frequency of the disease following a debauch, etc., without any privation; in short, the frequency of the first form. Such frequency, it is argued, proves the disease to be the result of poisoning, and the sufficiency of the poison alcohol to form at once the exciting and predisposing cause. The occurrence of some disease, such as catarrh, influenza, gastric disturbance, in a drunkard, may be also an exciting cause. Lastly, the statistics of prisons are against the theory, it is said, of privation. The first objection is shortly this, that we have proof of one cause (toxæmia from alcohol) being sufficient, and hence it is unphilosophical to seek a second. I can only meet this by stating, that there are different forms of the disease, which may have different causes, nay, a plurality of causes. Besides, I shall adduce positive evidence of the disease following the withdrawal of alcohol. With regard to prisons, I can only speak of military ones. No cases occur in them, I am aware, and am not surprised at the fact; but they occur antecedently, coming on in the guard-room, where, if a man be tried, he awaits his court-martial, probably for many days; and I state as a fact, that cases of delirium tremens commonly occur from the first even to the seventh day after the privation of liquor. The guard-room statistics would hence be every bit as strong the other way. I am aware that statistics do not settle the fact, they do not prove cause and effect, viz., deprivation of accustomed stimuli as a cause of delirium tremens; but they cannot certainly be urged against it, for they support at least the view of this privation being frequently an antecedent to the appearance of the disease. Is it a necessary antecedent? I believe it is in some cases. Take the following:—

Sergeant D——, æt. 39 years,—in daily expectation of a good-conduct medal.—Admitted April 13, suffering from a small boil upon the lobular appendage of the right ear; in perfect health apparently. Upon the afternoon of the 14th I noticed that he was very tremulous and nervous, and asked him, privately, about his habits. He denied, in the most positive and awful terms, that he drank hard, and refused my offer of a glass of brandy. Upon the morning of the 15th, I learnt that he had slept badly, and found him suffering from a decided attack of delirium tremens. He talked incessantly, was bathed in perspiration, had illusions, and fancied he saw strange animals, and heard strange noises. His tongue was coated, and very tremulous; the eyes ferrety, the pupils moderately contracted. He was ordered a sharp purgative, and cold douche to the head, followed by a basin of beef-tea. At 12 noon he took ʒi of laudanum, but was sick, vomiting nearly it all; at 2 P.M. he had some warm brandy and water, with ʒjs of laudanum, which he kept down; about 3 P.M. he had more beef-tea, and said he thought he should sleep, lying down for that purpose; I happened to be in the ward at the moment, and my attention was arrested by his livid face and heavy breathing. In about a quarter of an hour he had an epileptiform convulsion; two or three followed after a short interval, and in about three-quarters of an hour he died with symptoms of apnœa. Besides cold douche, artificial respiration by Marshall Hall's method, and enemata of brandy, were tried without avail. The *post-mortem* was made most carefully by myself, and I could detect no organic disease to account for his death. The left ventricle of the heart, however, was in an advanced degree of fatty degeneration; and, besides some venous congestion of the membranes of the brain, there were a few drachms of fluid in the cerebral ventricles.

Now, I would remark how strong is the tendency of the evidence, negative and positive, of the facts here. A man is entitled to a good-conduct medal—which presupposes eighteen years' absence from the defaulters' book as regards courts-martial. I learnt from his wife, subsequently, that for six or eight years he had drank very hard, and that, although she had never seen him drunk, yet she could not say that he was ever perfectly sober any night; that she did not remember his having ever been in hospital, or suffering from any disease. He comes into hospital, is deprived of his liquor directly, and in fifty-six hours is dead. This appears to me a strong case, but it is not by any means an isolated one; and others equally positive will be cited, far more than sufficient to meet the logical requirements of one grain of *positive* against a bushel of *negative* evidence.

Pathology.—Dr Watson's views may be epitomised thus:—The disease is "Exhaustion with nervous irritation;" the remedy, "sleep." Against this is urged the toxæmic view, and the positive chemical evidence of the presence of alcohol in the cerebral ventricles, and that sleep is an *effect* and sign of the improvement in the disease, and not the cause of it.

Dr Watson uses his terms advisedly. He does not pass them for more than they are worth. Are there not certain acquired physiological conditions or states of system which produce uncontrollable cravings and desires? and are not these cravings instinctive desires of a need felt by such an abnormal system? and supposing them unyielded to, do we not get nervous exhaustion and depression? Is it true that horses fed upon arsenic fall into a bad state of health when its exhibition is discontinued? The facts related of the Styrian and Hungarian peasantry relative to their frequent use of arsenic, and the evils which almost invariably arise from its discontinuance; the almost universally spread instinct in man to the use of narcotics, stimulants, etc. (such as opium, betel nut, tobacco, cocoa, with the rest); the growth of the custom into a habit, and the way in which men are impelled to the continuance of that habit, from the fear of the chain of morbid phenomena which follow the cessation of it;—do not these run very parallel to the facts we observe from the use and abuse of alcohol? Chossat's experiments upon the effect of starvation on animals would indicate that the nervous tissues undergo remarkably little relative loss compared with the other tissues, in spite of the great quantity of fat they contain, and their almost fluid consistence. This has been held to explain the cause of the curious psychical phenomena preceding death by starvation. Restlessness, delirium, and prolonged sleeplessness, are common precursors of death in such cases. Now it will be said, that no analogy can be established between such cases and the same phenomena following the withdrawal of alcohol. But I am not convinced of that. The whole doctrine of diets, however satisfactorily it may be settled upon a chemical basis, is decidedly not settled upon equally certain physiological data. We have facts in abundance to prove that the chemical value of food is not the physiological one, and that both man and animals live and grow upon substances, and in proportions, perfectly different from what a chemical view would indicate, or conceive possible. When we observe how spirit is meat and drink to a drunkard; how his system affords the proof of an altered and abnormal nutrition; how, in short, he has a special physiology of his own, it seems to me a natural and rational consequence, that the poison to him is no poison, but, on the contrary, a special fuel for his nutrition and development,—albeit diseased. Liebig has shown how the chemico-physiological theory of the action of stimulants upon the human system, is in accord with the actual experience of landlords and others, viz., that a far larger amount of food is consumed by the abstainer from alcoholic fluids, than by one who partakes a moderate quantity of them. It seems to be a well-ascertained fact, that alcohol economises the food and tissues, by arresting the amount of secondary metamorphosis. Then we have the influence of the custom producing a habit, and its known effects upon the body. Can any habit be suddenly discontinued and broken without some, nay, even a grave effect upon the nervous system?

There seems to me to be no end of evidence to prove that the sudden curtailment or withdrawal of any habit may produce nervous exhaustion; and if so, why, irritability is a necessary concomitant and index of that condition!

In regard to sleep. A drunken sailor knows very well that if he can "sleep it off," it is the best and most natural way of terminating his fit. No doubt the tendency to sleep is a sign of improvement in a case of delirium tremens. Dr Watson and others urge that sleep is the necessary precursor of improvement; but if I understand the objection raised to this view aright, it amounts to this, that before a patient recovers from delirium tremens, and as a sign and effect of his improvement, he sleeps—very probable; but I am sure the *post hoc* is often a *propter hoc*, viz., not that he sleeps after he improves, but he improves because he has slept.

Case.—G—— S——, æt. 30.—Admitted June 8, 1858, from the guard-room, where he had been confined two days. Had been for years a hard drinker. It was stated (but not upon reliable evidence), that prior to enlistment he had been confined for a few months in a lunatic asylum. Upon inquiry, it was found that he had been drinking very hard for some days, and that the debauch terminated about three days prior to his admission into hospital. He was labouring under all the symptoms of unmistakeable delirium tremens. After the administration of a purgative and a saline antimonial mixture for twenty-four hours, without any amendment, opium in gr. doses was commenced, and continued until his pupils became somewhat contracted, when it was omitted. He was allowed milk diet, with a basin of soup at bed-time. Forty-eight hours having elapsed in hospital without any sleep, and his delirium, tremor, and symptoms of exhaustion augmenting, it was determined to give him chloroform; for which purpose another assistant-surgeon with myself, alternately, sat at his bedside all night; and he was kept, at intervals, under its influence for eight hours, during the greater part of which time he slept soundly. At the expiration of this period he awoke, and partook of some broth. He appeared far less tremulous, had lost his rapid delirious conversation, but retained his suspicious manner, and was evidently haunted by illusions. After some interval he was again put under the influence of chloroform, and slept for four hours deeply. Awaking, he was still more rational and restored; and after drinking two bottles of porter he spontaneously fell asleep. In this state he continued six hours, and awoke rational and well. He was retained in the hospital for some period, on account of some dyspeptic symptoms and boils, and with the view to invaliding on account of his uncontrollable habit of drinking. This man was a dipsomaniac indeed. I think I never beheld features so expressive of a true drunkard in my life. During his fits he seemed to have laboured under certain dominating passions, and these had left such impressions upon the facial muscles as to have permanently altered his whole physiognomy.

Now, here we have a case of delirium occurring in a chronic drunkard, who had been deprived of his stimulus for two days. He is admitted into hospital, and does not sleep, his symptoms becoming worse; by the aid of chloroform he slept for six or eight hours—improves—and, by the administration of more chloroform with the aid of porter, he sleeps again, and is cured.

A—— B——, a mess sergeant in a line regiment, had always been suspected of drunken habits. One day he absconded with some money, was caught, and confined to the guard-room. Whilst there, he became the subject of delirium tremens, and was brought to hospital, with the history of having endeavoured to poison himself with arsenic. This case was a very severe one, for the patient had an ever-present sense of his crime, a fear of punishment, and was, moreover, suffering from all the symptoms of the disease. Numerous means were used (including opium) without any benefit, and a fatal prognosis was formed of his case. The regimental surgeon administered chloroform by inhalation, and procured artificial sleep for many hours. The man awoke so much improved, that its administration was recommenced, and he was quite restored by its aid.

Here we have the symptoms continuing for a certain period without any improvement, while induced artificial sleep or narcotism was attended with such marked improvement, as to have impressed the medical attendant with the belief that his patient owed his life to the chloroform.

It would be tedious to cite other cases proving the same thing. I conclude from them, that to procure sleep is sound, excellent advice, the good effects of which are borne out by actual experience.

Treatment.—The use of stimulants (alcoholic) in cases of delirium tremens, with the view of removing the exhaustion, allaying the morbid irritation, and procuring sleep, would be looked upon as even more wrongly directed. If the etiology usually propounded be radically and totally erroneous, then we are guilty of adding more poison to an already poisoned blood, to procure what is not needed, and what the presence of alcohol in the system is preventing—sleep.

G—— M——, æt. 45, but grey, and looking much older, was admitted into hospital for some gastric disorder. This man was, and had for years been, a very hard drinker, and his features, particularly the nose, indicated "potations deep." One morning (after he had been in hospital for some days) I was called to him. He appeared insensible, was breathing very heavily, the face and lips dark and turgid, the pupils contracted. Whilst examining him he had a convulsion of a tetanic character, the body being arched in the position of opisthotonos. The muscles of the fore-arm were so tense that the radial pulse could not be felt. The heart's impulse was scarcely perceptible. Having thrown a bucket of cold water over the head, I took advantage of a few moments of apparent consciousness to pour a glass of hot brandy and water into his stomach; and he recovered almost immediately, so much so, that the medical officer whose patient he was, could scarcely credit the state in which I found him.

G—— P——, æt. 36, admitted April 14, 1858, from the guard-room, where he had been confined two days. His disease was unequivocally delirium tremens, and no remedial measure seemed to benefit him. He was tremulous, restless, delirious, and did not sleep even with the aid of the fresh administration of opiates. Two bottles of porter were given him at bed-time, and he was observed to smoke during the day some strong tobacco. His hands were so tremulous that the orderly had to hold the pipe in his mouth. By these means he slept, and slept well, and made a good recovery, after having been dosed unavailingly for four days previously to procure that result.

At this moment I have a soldier in hospital who has always drank freely. He has been under treatment upwards of eight days for trivial bronchitis, and symptoms of incipient delirium tremens appearing now, necessitate the use of alcohol and opium with manifest advantage to the man, as regards sleep, appetite, and the disease itself.

These cases illustrate two points: the actual occurrence of delirium tremens after and during the privation of liquor; and the speedy removal of the symptoms by the re-establishment of the custom, when other means failed.

I have purposely selected these cases, because they illustrate also the fact, that whilst the men were taking their accustomed stimuli, they continued well, for they were men who never appeared at hospital at all.

I shall not give cases of apparent cure by the administration of opium, as they can be found in any work; and, after all, they are no proof that your patient recovered by the treatment, but, perhaps it will be urged, in spite of it.

The most curious cases are those in which the delirium continues for a long period, but in a modified degree; the patient sleeping tolerably every night, eating and drinking, and performing all his functions well. It is well to look out here for some complication (particularly renal or hepatic disease), for it is surprising how small an amount of urea circulating in the system may give rise to a persistence of anomalous symptoms. Besides the uræmic, we have a peculiar and difficultly treated form of the disease when jaundice is present, whether arising from fatty degeneration, cirrhosis, or other hepatic disease. These cases, of course, are more frequently fatal; but I find that, after local depletion, purging, or diuresis, stimulants, more particularly gin, are not only not contra-indicated, but are decidedly useful, more particularly if the patient be an old chronic drunkard.

The most fatal form by far is that in which we have delirium tremens occurring in a person already the subject of typhoid fever—cases by no means uncommon in this climate. Having separated, however, these cases, there will remain many in which a chronic derangement of the nervous system is manifested, the patient sleeping night after night, for longer or shorter intervals, and performing all his functions well.

In a few cases, opium given in full doses at bed-time will secure a deep sleep and manifest improvement. In others, a liberal but regulated allowance of stimulants will prove advantageous, when everything else has been tried in vain. In some, no plan of treatment will succeed, although the patients frequently recover after a long interval, while others lapse into chronic mania, melancholia, or some form of insanity, ending their days in a lunatic asylum.

With reference to that singular phase of our mental life-sleep, Sir Henry Holland advances views, which my observation of the sleep of delirium tremens patients has led me to think perfectly truthful.

He is of opinion that sleep is not a unity of state, but a series and succession of states, ever varying from moment to moment. These variations having every degree of diversity, from complete wakefulness to the most perfect sleep of which we have cognisance. It has long occurred to me that the sleep of drunkards and in delirium tremens differs much from the normal standard of intensity. Every one must have experienced in his own person, when he was anxious to awake at a certain hour, how he awakes at that time with a feeling that he has not slept well, or at all, although he may be assured that he has slept very soundly.

Sir H. Holland's observations are so good upon sleep and dreaming, in relation to delirium and insanity, that I shall quote his words:—"I know of no principle so capable of affording a guide, as that which views all the forms of insanity, including delirium, in their relation to corresponding healthy states of mind, tracing this connection through those intermediate grades, which are so numerously exposed to us in the various conditions of human existence. The diversities of mind in what is accounted its healthy state, the effect of passions in suddenly altering its whole condition, of slighter emotions in gradually changing it, and of other incidents of life in affecting one or more particular faculties; its subjection periodically to sleep, and casually to the states of intoxication, somnambulism, and reverie; its gradual transition in fever from a state where there is consciousness of vague and wandering ideas to the state of perfect delirium;—all these furnish so many passages through which we may follow sanity into insanity, and connect the different forms of disordered intellect as well with each other as with the more natural and healthy functions of the mind."

To sum up, I would say, that the first and most frequent form among soldiers of this disease requires rarely indeed opium, particularly at the commencement of the attack; in short, no specific treatment is necessary. In the second variety, I would give it cautiously in moderate doses, after free purgation, provided I did not find my patient improving by rest and tranquillity. The opium had better be given at any rate in a full dose before the accustomed hour of sleep. Should it not succeed, my experience would indicate a "hair of the dog that bit him," in the shape of porter or hot brandy and water, spite of what has been urged to the contrary. If the surgeon avoid both opium and stimulants, and his patient goes on badly, depend upon it the chances are in favour of another doctor advising one or both of these noxious agents, with much advantage to the patient, to the no little chagrin of the first medical attendant. Where great irritability of the stomach is present, there is nothing better than a sedative dose of calomel (gr. vj.), with or without opium, and a large enema.

Supposing the physiological effects of opium upon the system to be manifested, without sleep or improvement following, I should omit its use for some hours, give my patient some good broth, flavoured with brandy or wine, and induce artificial sleep at night by the aid of chloroform.[1]

I trust it will be seen that the use of opium is advocated as a measure requiring discrimination and caution, but as a reliable one in many instances.

Of course the complicated forms require that the greatest discretion should be exercised in its administration. Where an embarrassed circulation exists, marked by venous congestion of the mucous membranes and duskiness of the face, it is better avoided altogether. Pulmonary emphysema, if extensive, cardiac disease, or indeed any thoracic complication, will require also great care, if they do not indeed prohibit opium in any form.

I have now made many *post-mortems* upon the bodies of drunkards, and although I cannot endorse the statement of Professor Hartyl, that he can tell by the scalpel alone the cerebral tissue of a drunkard, yet I think the most common physical change induced by alcohol upon nerve tissue is a remarkable dryness and toughness of texture. This is well seen in the white or fibrous substance. When such an abnormal change exists, your patient is likely to find his way to an asylum; and in some such cases it appeared to me that alcohol was the only agent capable of nourishing such an abnormal cerebrum, and capable of supplying the conditions necessary to the performance of its functions indifferently well.

The action of alcohol upon the system is not by any means well understood. Why does the drunkard preserve his plump, healthy aspect so well, for so many years, with so little food? How are the effects of different liquors to be explained? Why should alcohol, as wine, exhilarate only, while the same amount of gin inebriates? Is the apparent paradox explained by the views held in France for instance, of the disinebriating effects of ether, which in some form or other is present in all wines? How is it that drunkards are so difficultly influenced by chloroform? Is it that their nervous system has been so long accustomed to carbon (which Nunneley has found to be the essential element of all anæsthetics), that it fails to affect them?

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[1] I perceive that, among many successful cases of mixed delirium tremens and traumatic delirium, treated by this agent, one fatal case has been recently recorded, apparently directly due to the chloroform.

Article II.—*Notes on the Surgery of the Indian Campaign of 1857–58.* By John Brown, M.D., Assistant-Surgeon, Bengal Medical Service.

(*Continued from page* 249.)

7. *Wounds of the Chest.*—Eight severe cases occurred, of which six proved fatal. In one of the recovered cases, it is doubtful if the lung was injured; in one of the fatal cases it was not.

No. 1. An old man, fife-major of the regiment, was wounded at the battle of Cawnpore, in the apex of, I think, the right lung, above the scapula. He was apparently doing well, but was seized with cholera, and died. I have no notes of the case.

No. 2. Baldan, æt. 21, syce, my own servant, a stout, healthy Hindustanee, was wounded in the chest, on the 25th September 1857, at the forced entry into Lucknow. The ball had entered the apex of the left lung, and made its exit on the left dorsum, below the scapula. He was seized with typhoid pneumonia, of which he died, twelve days after the injury. On that day some hæmorrhage (venous) took place by the hole of exit.

No. 3. A sepahi was shot in the back at the final taking of Lucknow. The ball lodged. This case proved fatal. I possess no notes of it.

No. 4. Captain D., aged about 35, was wounded at the final taking of Lucknow. The ball entered the fleshy part of the right shoulder, perforated the chest in the axillary space, and made its exit at the left lower dorsum. He never rallied, but died in a few hours.

No. 5. This was an injury of the lung in a sepahi at Lucknow. The man died of typhoid pneumonia. The ball entered the apex of the left lung, and came out at the base behind. He died eighteen days after the injury.

No. 6. Bagail Singh, æt. 30; was wounded at the final taking of Lucknow. The ball entered the chest at the left lower dorsum, and lodged. He suffered a good deal from pain, which afterwards obliged him to sit upright. There was no evidence, however, of the ball being loose in the chest, lying upon the diaphragm. This man ultimately recovered.

No. 7. Lall Singh, Hindustanee, a native officer, was admitted into hospital at Alumbaugh, in consequence of having accidentally wounded himself with his own musket. It was found that the ball had entered about an inch to the outside of the left nipple, and had come out in a straight line over the second rib. The cuticle of the arm and chest was burned round about. The probe did not enter the chest, but ran towards the axilla. There was, however, slight crepitus felt in the cellular tissue, near the upper or wound of exit. No chest signs.

Two days after, he spat up a little blood and mucus; but beyond this no further signs occurred, and he was discharged some time after, well.

No. 8. Aree Chum, æt. 20, Hindustanee, soldier's cook, was admitted into the camp native hospital at Alumbaugh, in consequence of having been shot by an Enfield rifle in the back. He had been previously seen by Dr Home, 90th Light Infantry, and then had spat blood. He was a large, stout man; but as some time had elapsed since the injury, he laboured under shock. On examination, it was found that the ball had entered the right lateral region, just to the right of the scapula, and on a level with its middle. It had apparently gone through the lung, and made its exit at the posterior angle of the axilla of the opposite side, then going through the fleshy part of the arm, and coming out in front. The rib seemed perforated at the wound of entrance, but not comminuted; at the wound of exit it was severely comminuted; the respiratory murmur was audible; there was slight swelling over the left dorsum; a little oozing took place from the wound of exit. He was put upon opium and small doses of rum. Signs of pneumonia of both lungs came on, and he died two days after the injury.

The body was examined four hours after death, on the 6th February 1858.

Rigor mortis well marked; body stout; head not examined.

Thorax. Pericardium contained about 2 drachms of clear fluid; heart healthy; left ventricle contracted; right contained a small semi-decolorized clot. Lungs.—Left. Soft recent lymph in thin patches, on anterior surface; lower lobe non-crepitant and congested. Right.—Old adhesions universal; most firm in front; upper and middle lobes imperfectly crepitant, and carnified in part; the upper part of lower lobe condensed from red hepatization; liver large, fatty; spleen large, firm; kidneys normal. The track of the wound, from the wound of entrance on right side, was through below the middle of the right scapula, fracturing it; the left scapula was also fractured at its middle; and the fourth rib of left side was also fractured near its articulation with spine. *In no part of its course did the wound communicate with the pleura.*

With reference to these cases, I would only draw attention to four of them. In the case of the European officer, No. 4, the effect of a wound through both lungs is exemplified in the rapid death. Doubtless such injuries are invariably fatal; for the collapse of the lung, which must invariably follow on the admission of air into *both* pleuræ, will quickly prove fatal.

Case No. 6 is interesting, as showing that a ball lodging in the lung is not necessarily fatal.

In case No. 7, the lung was, as far as physical signs were to be trusted to, uninjured; yet there was slight external emphysema, and the man spat up blood once.

In case No. 8, the most interesting of the series, and which others, as well as myself, took for a wound of the lung, blood was spat up immediately after the injury, and all the symptoms pointed to wound of the lung. Emphysema and hæmoptysis are, therefore, not invariable tests of wound of the lung,—an opinion which a recent writer upon penetrating wounds of the chest has enunciated.[1]

8. *Wounds of the Abdomen.*—In four cases, the abdominal cavity was penetrated or otherwise injured. In all, the result was fatal. In one case, cholera carried the man off. The ball had lodged. In another, death followed in a few hours.

Case No. 3. Francis, æt. 32, Hindustanee officer's servant, was admitted into the Camp Hospital at Alumbaugh, in consequence of an injury from a round shot. It appears that, while sitting cleaning knives, in the usual Asiatic posture,[2] a round shot came and struck a cart in front of him. It then rebounded, and struck him.

On examination, it was found that the left side of the scrotum was torn up to the pubis; there was an oblique mark over the right side of the abdomen, where the shot had glanced past, and where there existed a good deal of swelling. The testicle was exposed; the scrotum had retracted, and some of the muscles of the thigh were exposed; the bladder was seen at the bottom of the wound; there was a little venous hæmorrhage. Compresses were applied. Next day there was sloughing, with great depression; the urethra was uninjured, and urine passed freely. Two days after the injury, he died of exhaustion, sensible, but complaining of great pain of the lower part of the abdomen.

On *post-mortem* examination (which was necessarily cursory), the pubis of the left side was found split up into wedge-shaped fragments, and the upper part of the sacrum of the same side was fractured; the swelling of the lower part of the abdomen was owing to subcutaneous infiltration; the bladder was sound; a small patch of ecchymosis was observed on one of the small intestines, but there were no traces of peritonitis.

No. 4. Kemma, æt. 36, Hindustanee, labourer, was admitted, in consequence of having been struck by a round shot in the Alumbaugh. On examination, it was found that, about two inches below the right nipple, a space of about three inches square had had the cuticle rubbed off; there were no other signs of injury, but he was in a state of collapse. He died the next day.

Post-mortem.—Chest organs healthy; liver firm and healthy; stomach distended; transverse colon infiltrated internally with blood; mesocolon (transverse) in a like state; peritoneum filled with a bloody fluid.

The two last cases are extremely interesting. In case No. 3, the injury was extremely severe; the fracture of the sacrum, taken in connection with the course of the round shot, is very curious, and somewhat inexplicable. It may have been, however, fractured by an action similar to what occurs in fracture by contre-coup in head injuries.

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[1] Dr Fraser, physician to London Hospital.

[2] That is, in the position we would assume when seated on a low stool; but with Asiatics no stool is used generally.

In case No. 4, the results of a round shot passing over a surface at some distance from the injury which caused death, and the extremely slight nature of the external wound, are both circumstances of great importance. It is a very curious case, although some medico-legal cases, not dissimilar, have been recorded.

9. *Wounds of Joints.*—Six cases of this form of injury occurred, and five cases died. One case was an injury (very slight) of the shoulder-joint; the knee cases were five, and all proved fatal.

No. 1. This case was admitted into hospital at Allahabad, but was not seen by me. The man was said to have sustained a wound of the knee-joint; he died. No operation was performed.

No. 2. Kuzan Singh, æt. 30, sepahi, was wounded in the leg by a musket ball, in Lucknow, on the 26th September 1857. The ball had entered the knee-joint, and lodged, no bone being apparently injured; the ball could not be found. Amputation was proposed, but refused. The limb became much swollen, and spreading gangrene ensued, of which he died, seven days after the injury.

No. 3. But. Singh, æt. 25, sepahi, while in the act of throwing a six-pounder shell from his hand, was injured by its prematurely exploding, in Lucknow, on the 11th October.

On examination, the right hand and arm were found completely shattered. The knee of the same side was also injured; on its outer side was an opening of about one inch square, extending fairly into the joint, and a loose piece of the articular surface of the femur, about half an inch square, and of a wedge shape, was extracted. The fore-arm was immediately amputated at its middle; the radial and ulnar arteries were tied, but the interosseus would not bleed; another twig was tied.

Excision of the joint was proposed, but refused; a compress and bandage were applied.

12th October. Skin cool; knee not swollen; wound occupied by a firm clot, which was not removed; stump doing well; no hæmorrhage. 15th. Slight effusion into knee, which, on being squeezed through the now decolorized clot, was seen to be limpid, clear, and non-purulent; most part of the arm stump was healing by the first intention.

16th. Pulse 70; skin cool. 17th. Pulse 100; feverish at night.

18th. Discharge when pressed from knee more yellow.

22d. A good deal of discharge from several openings in the stump; febrile symptoms continue.

From this time the bad symptoms continued; the arm stump opened out and sloughed; the discharge from the knee became purulent; and he died, exhausted, on 5th November 1857, twenty-five days after the injury. The treatment consisted of the administration of quinine and opium.

No. 4. Mahun Singh, æt. 30, rebel. This man was wounded on the 16th January 1858, in an attack made upon us by the enemy at Alumbaugh. One wound was above the left knee, and the limb was dangling by a piece of skin. In the other knee there existed a compound fracture of the patella. The left thigh was amputated immediately, at the middle third, and the knee of the other leg excised immediately after by an H incision. No hæmorrhage followed; and although no chloroform was given, he scarcely seemed to feel the operation. He died next evening, with symptoms of shock.

No. 5. Gormuck Singh, æt. 30, corporal. This man was wounded on the 14th March, at the final taking of Lucknow, and removed to the Field Hospital, in consequence of a perforating wound of the knee-joint. He was readmitted into the Regimental Hospital on the 1st April, emaciated, and labouring under a typhoid form of fever. The knee was much swollen, and discharging profusely. He died exhausted the next day.

No. 6. Lieut.-Col. B. was wounded by a musket ball at the taking of Lucknow. The smaller wound was near the shoulder, and above the clavicle; the larger, into which the finger could have been inserted, was placed at the outer margin of the deltoid. A clear fluid issued from the upper wound; the joint seemed to have been opened, but the head of the bone seemed uninjured. No further examination was made, and this officer made a quick recovery.

The last case, No. 6, owes its favourable issue in no small degree to the absence of all exploration of the joint after the first examination.

In the cases of wound of the knee-joint, all fatal, speedy amputation or excision would have been the proper treatment, in four; and if there is a class of cases in military practice which demands that the knife should follow the wound, it is this class in which the knee-joint is injured by a musket ball. Occasional recoveries do not affect the question at all; for operative measures should always be had recourse to when there is no chance of recovery without them; and that chance is too remote to be considered in comparison with the greater chance of a fatal result in this form of injury. The operation of resection of the joint, while still doubtful in most cases of disease, seems to me to be applicable to some of the cases of gunshot injury of the knee, provided there be little injury to the bones, and the camp be a standing one;[1] in marching armies the operation is decidedly inadmissible. It is singular why the knee-joint should be so peculiar in the results observed; for other joints, albeit with a smaller articulating surface, have symptoms much less in degree than their size would warrant. It is possible that the plan recommended by Stromeyer and Macleod, of laying the articulation freely open, might lead to a cure in slight cases. In Stromeyer's one case, the results are stated to be most encouraging.

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[1] Macleod, *Surgery*, *Crimean War*, p. 316.

10. *Fractures of Extremities.*—I will divide my observations into cases in which operations were or were not performed. The cases of operation will be detailed under the head of amputation.

The total number of cases was twenty-seven. Of those treated without operation, eleven cases occurred, and five proved fatal. Two cases of fracture of the thigh-bone, one of fracture of the humerus, and one of fracture of the fore-arm, died. The cases stand thus:—Fracture of thigh, three cases, of which two proved fatal; two cases of fracture of leg, of which one recovered and one died; of the metatarsal bone, one case, which recovered; of the arm, three cases, two of which recovered, the result of the third not accurately known, supposed to be doing well when transferred; of the fore-arm, three, in one the result was favourable, the other was left under treatment, the third proved fatal from tetanus.

Fracture of the Thigh.—No. 1. Nulta Singh, æt. 40, sepahi. This man was wounded by a musket ball in the thigh, at the forced entry into Lucknow, on the 25th September. As it was pretty clear that the femur was fractured through the middle, an attempt was made to save the limb; it was therefore placed in Desault's splint.

Spreading gangrene came on, and reached above the ilium; the patient died on the sixth day after the injury.

No. 2. Boota Singh, æt. 50, sepahi. This man also was wounded in the thigh, on the 25th September 1857. The wound perforated the middle third of the thigh, and the femur was fractured without comminution, apparently at its middle third. As the man was old and feeble, the wound small, and the fracture not comminuted, an attempt was made to save the limb; it was put in Desault's splint. Diarrhœa subsequently came on, with occasional venous hæmorrhage. No attempt at union took place, and he died emaciated, twenty-seven days after the injury.

No. 3. This case (Sudeen Dhoobie) has been detailed under Wounds of the Head. He recovered.

Fractures of the Leg.—Two cases occurred.

No. 1. Sujan Singh, æt. 30, sepahi. This man sustained a compound comminuted gunshot wound of the tibia and fibula, at the forced entry into Lucknow, on the 25th September 1857. The ball had perforated the leg at the middle; several pieces of bone were extracted, and the limb was put into splints. Forty-nine days after, the bones were found united, and he ultimately recovered well. The case gave me a great deal of trouble; but as the injuries both of the soft parts and of the bones were small, I felt sanguine as to the result, which occurred while we were half starved in Lucknow.

No. 2. This case was noticed already, under the head of tetanus. Bahadur Khan, æt. 35, sepahi. This man was wounded in Lucknow, on the 6th October, by a musket ball. On examination, he was found to have sustained a compound comminuted fracture of the fibula, with a large flesh wound. Several pieces of bone were extracted, and a splint applied. The wound began to slough, and five days after the injury, tetanus came on, from which he died in two days.

Bones of the Foot.—One case of fracture of a metatarsal bone occurred in Lucknow; it did well.

Fractures of the Humerus.—The cases of this injury were four in number. No. 1 proved fatal, from tetanus. It occurred in an European officer, and has been already detailed under the head of tetanus.

No. 2. This case was doing well when transferred, but the fracture had not then united.

No. 3. Mayt Singh, æt. 30, corporal. This man was wounded on the 14th March, at the final taking of Lucknow. He had sustained a compound fracture of the humerus, at its upper third, from a musket ball. Forty-seven days after the injury, the bone had united. Some trouble had been incurred, and an abscess had formed at the lower edge of the pectoralis major.

No. 4. Sut Singh, æt. 32, corporal. This man was also wounded on the 14th March, and was found to have sustained a gunshot wound of the upper third of the arm, fracturing the humerus transversely. Ninety-one days after the injury, the bone was reported by me to be firmly united.

Fractures of the Fore-arm.—Two cases of this injury occurred.

No. 1. Baryam Singh, æt. 40, corporal. This man sustained a gunshot injury of the fore-arm, on 25th September, at the forced entry into Lucknow. The ball perforated the arm, and fractured the ulna near the elbow. An abscess formed, but the bone ultimately united. Necrosis followed, and several pieces of bone came away. When last seen, it seemed probable that more bone would exfoliate.

No. 2. In this case the fracture was near the wrist. It was transferred, and, when I left Oude, was in the General Hospital. It latterly promised well, after a good deal of inflammation.

I now proceed briefly to consider the results of these cases. We have seen that both attempts to save the thigh in the fracture cases were unsuccessful, although the injury to the bone and soft parts was slight. The circumstances in which they were placed in Lucknow, doubtless, had much to do with the fatal result; but, upon the whole, I am inclined to think that amputation, as a general rule in such cases, is the proper treatment.

In injuries of the leg, conservative surgery has more scope; and the case in which I tried it did very well. In fracture of the leg, with little comminution of the bones, where the flesh wounds are small, and the vessels untouched, an attempt should be made to save the limb.

In fractures of the upper arm, the results are as favourable; and under similar circumstances an attempt should be made. The same remarks apply to injuries of the fore-arm; but the treatment is exceedingly tedious and laborious in a hot climate. Two cases of injury of the upper extremity died of tetanus; but these, I think, must be looked upon as exceptional.

I now proceed to consider the case of fracture of the extremities, in which operative measures were had recourse to.

I find that seventeen cases of amputation have been performed.

11. *Amputation.*—Of the seventeen amputations, fifteen were single, and in one a double amputation was performed; so that sixteen individuals were operated upon. Of these, thirteen were major operations and three minor; of the minor operations, three in number, all survived; of the major operations in Lucknow, none survived; they were eight in number. Of those operated upon out of Lucknow Residency, five in number, three survived.

Amputation of the Thigh.—This operation was performed five times; only one case survived.

No. 1. Pertul Singh, æt. 30, sepahi. This man was wounded on the 26th September 1857, by a 32-pounder shot, which smashed his leg immediately above the knee. Little hæmorrhage occurred; the dangling mass was removed with a native sword; a bandage was applied, and a compress was placed over the femoral; amputation of the thigh was performed in the evening; he died of shock next day.

No. 2. Lall Singh, æt. 31, sepahi. This man was wounded at the same time, and in the same place, by the round shot which injured the other. The limb was also removed by a native sword, and amputation performed in the evening. He died of shock next day.

Both these cases occurred when we were temporarily shut up in a house. The wounded managed to escape on camels to the Residency, we remaining. These amputations were performed in the Residency during my absence.

No. 3. Mahan Singh, æt. 30, rebel. In this case the thigh was amputated at the middle third. The man died next evening. The case is fully noticed above. He had also his other knee excised.

No. 4. Gungoo, æt. 50, dooly-bearer, Hindustanee. This man was admitted into the Camp Native Hospital at Alumbaugh, on the 27th December 1857, in consequence of an injury by a round shot. On examination, it was found that the left knee-joint was completely smashed in front, with a large flesh wound behind and below; the condyles of the femur were uninjured; the patella and the upper wound were retracted. Chloroform was given, and amputation of the thigh performed. I made a semicircular incision down on the femur, and took the posterior flap from the leg; about two inches of the femur, however, required to be sawn off. The man did well for several days, during which I kept him on opium and 1 oz. of gin 4 times a-day, as he was a feeble old man. Ten days after the operation, gangrenous sloughing of the lower flap came on, and he died exhausted, eighteen days after the injury.

No 5. Parenie, æt. 25, Madras native cook. This man was struck by a round shot on the right thigh, on the morning of the 24th February 1858. On examination, it was found that the knee and the lower third of femur were completely smashed. Chloroform was administered, and I amputated the thigh at its middle third. This man did well. I had to transfer him, but again saw him on 27th March, when he was looking well, and the stump was said to be whole.

Amputations of the Leg.—Two amputations have been performed by me; both were in the Residency of Lucknow, and both proved fatal.

No. 1. This case was fully detailed at page 236. The operation was secondary; the man had symptoms of tetanus when the operation was performed. He died of exhaustion, three days after the operation.

No. 2. A dooly-bearer, æt. 25, was wounded on the 26th September 1857, at the Residency gate, in Lucknow, by a musket ball. Both bones of the right leg were found to be extensively fractured and comminuted at the middle of the leg, with a large flesh wound. The leg was amputated below the knee without chloroform, about one hour after the injury. The stump sloughed, secondary hæmorrhage came on, the posterior tibial was retied, the stump began to granulate again; but he died of exhaustion, eight days after the injury.

Amputation at the Ankle-joint.—This operation was performed once in the Lucknow Residency. It proved fatal, from other causes than the injury or the operation.

Utum Sing, æt. 20. This man was wounded on the 6th October, in Lucknow, on the side of the heel by a musket ball, which perforated, coming out on the opposite side. On examination, the os calcis was found fractured at the base, and several pieces of bone were extracted; twenty-two days after, the joint was swollen; the man laboured under diarrhœa, and declined any operative interference; thirty-five days after the injury, his consent to an operation was obtained; the injury, in its constitutional effects, was wearing him out; he was one of the most weakly men of the regiment before. I performed amputation at the ankle-joint (Syme's); the incisions were made through wounds, but a good flap was formed; the tissues were found infiltrated with serum; at the base of the os calcis was a large worm-eaten looking cavity, where the ball had passed; a piece of bone adhered to the lower flap, and was dissected out; slight sloughs separated from the old sores. Secondary hæmorrhage came on seven days after the operation, and one of the plantars was retied; the lower flap had never united with upper; nine days after, the flap was reported granulating. This man was transferred, and was one of the sick who were hurried down to Allahabad, when the rebels took Cawnpore in November 1858. He died on the road, in all probability of exhaustion; had he been stationary, I have little doubt he would have lived.

Amputation of the Arm and Fore-arm.

No. 1. Muron Singh, æt. 40, sepahi. This man was blown up in a musjid, by the enemy, on the 17th October, and dug out of the ruins. On examination, it was found that the second, third, and fourth ribs of the right side were fractured, near the sternum, and again near the axilla; and in the interval there was a depression, into which the clenched fist might be placed, the depressed portion not being felt, and the skin rising and falling with the inspiration and expiration.

The left hand was scorched, both bones of the arm were fractured above the wrist, the muscles were much torn, the radial artery was intact.

The right arm was fractured above the elbow, a large skin wound also extended to near the shoulder-joint; the ulna was also bared in its whole extent. The right arm was amputated immediately after the injury, below the shoulder, without chloroform. The left fore-arm was amputated at the upper third. I found, in each operation, very little expression of pain. He died two days after, of shock.

No. 2. Gungoo, æt. 40, coolie. This man was admitted into the Native Hospital at Alumbaugh, in consequence of an injury to his arm, from a round shot, on 26th January 1858.

On examination, it was found that he had sustained a compound fracture of the upper third of the humerus, with a flesh wound on the inner side of the arm, extending up nearly to the axilla; there was a good deal of arterial hæmorrhage. I amputated the arm immediately; the largest flap was taken from the outside. This case did well, and he was ultimately pensioned by Government.

No. 2. Goolab Singh, æt. 35, sergeant. This man was wounded at the storming of the Kaiserbagh, on the 14th March, at the final taking of Lucknow. He was found to have sustained a compound fracture of the humerus, with a flesh wound; he was sent off to the Field Hospital, where the arm was amputated at the upper third, under chloroform. The stump healed rapidly.

No. 3. Nehal Singh, æt. 40, corporal. This man was wounded on the 15th March, at the final taking of Lucknow, in the right hand. The injury was a severe sword-cut. Amputation at the fore-arm was performed there. He was readmitted into the Regimental Hospital on 1st April, but died on 8th April, labouring under a typhoid form of fever.

No. 4. But. Singh, æt. 25, sepahi. In this case the fore-arm was amputated; the man had also a wound of the knee-joint. The case proved fatal, and is fully detailed at page 319.

The amputations of fingers, three in number, were all successful. One was attended, in Lucknow, with secondary hæmorrhage. I may mention that in another case I removed successfully the first phalanx of two fingers.

I may now, in conclusion, advert briefly to the unsatisfactory nature of these cases as a whole, and particularly to the unsatisfactory nature of operations in Lucknow, already noted; and I must say, that while the recovery of natives in ordinary quiet civil life is very remarkable, after severe operations and injuries, in military life, under the circumstances in which we were placed, the results were even more unsatisfactory than with Europeans,—a fact I will prove further on; and I am glad to see that the same remark has been already made by others in the Punjaub campaign. "An opinion prevails, that a native is a better subject for surgery than the European, and this may be the case during the hot weather, in our old provinces; but our experience during the late campaign proved the contrary, at least as far as regards the sepoys, exposed to the inclemencies of a northern climate during the cold and rainy season of the year. The success of surgical operations was, consequently, greatest amongst the Europeans, less so amongst the natives of our own army, and still less so amongst the spirit-broken and comfortless wounded of the enemy."[1] And this leads me to say, that in military surgery more than in civil, we must be cautious in acting upon previous maxims, derived from warfare under *different circumstances;* and that often we shall find, that the safest rule will be, to regard the nature of the injury, the individual in whom it has occurred, the circumstances in which he is placed, and the general principles of surgery, as applied to his case.

I append, in a tabular form, the major operations performed, with their results; also including the minor:—

Amputation.	No.	Cured.	Died.	Per Cent. Mortality.	Complications, etc.
Of Thigh, . .	4	1	3	75·	Shock in 2; gangrene in 3d, fatal case.
Of Leg, . .	2	...	2	100·	1 died of exhaustion.
Of Ankle, .	1	...	1	100·	Died of exhaustion.
Of Arms, . .	3	1	2	66·	1 died of shock; other, pyæmia.
Of Fore-arm,	3	...	3	100·	1 double amp. died of shock; other 2, pyæmia.
Of Fingers, .	3	3	...	...	
Parts of do.,	1	1	...	...	
Total, . .	17	6	11	64·	

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[1] Dr Murray's Report of the Field Hospital Army of the Punjaub.—*Indian Annals, Medical Science*, No. 8, p. 667.

Recollecting that these represent *all* the operations, and that the Lucknow operations were *all* fatal, I now tabulate the operations performed on the European part of Havelock's force. For the part relating to the 90th Light Infantry, I am indebted to my friend, Dr Home, then the surgeon of the corps. For the rest, I am indebted to Assistant-surgeon V. M. Macmaster, Her Majesty's 78th Highlanders.

Regt.	Amputation.	No.	Cured.	Died.	Per Cent. Mortality.	Complications, etc.
90th L. I.	Of Thigh, . .	3	...	3	100·	Cause of death in the 6 fatal cases:—Pyæmia in 3 cases, exhaustion in 2, sloughing in 1.
	Of Upper Arm,	6	3	3	50·	
	Of Fore Arm,	3	3	...	...	
	Part of Hand,	1	1	...	...	
H.M. 84th.	Of Thigh, . .	...	...	...	...	
	Of Leg, . .	1	...	1	100·	
	Of Shoulder-joint, .	2	...	2	100·	
	Of Upper Arm,	3	2	1	33·	1 had wounds in both thighs by grape-shot; diarrhœa.
	Of Fingers, .	2	...	...	...	1 with wound of lower extremities.
H.M. 5th.	Of Thigh, . .	1	...	1	100·	Died of shock.
	Of Leg, . .	2	...	2	...	Hospital gangrene.
	Of Ankle, .	...	...	...	...	
	Parts of Foot,	2	2	...	...	
	Of Upper Arm,	1	1	...	...	
	Parts of Hand,	4	3	1	...	1 case fatal from venous hæmorrhage.
Madras Fus.	Of Thigh, . .	3	...	3	100·	
	Of Leg, . .	2	...	2	100·	
	Of Great Toe,	1	1	...	...	
	Of Upper Arm,	1	...	1	100·	
	Of Fingers, .	9	9	...	...	
	Total, . .	47	27	20	42½	

The results, although gloomy enough, it will be seen, are more favourable than those I have recorded amongst natives. My time does not permit me to criticise the results more closely. I regret that I have not at present the results of operations in the 78th Highlanders.

I now, in spite of these melancholy results, distinctly believe and hold, that in injuries of a severe nature to the thigh, amputation immediately after the injury in military warfare is the proper course, and that conservative surgery may, under such circumstances, be the means of losing life instead of saving it, but that the greater proportion of injuries of the upper extremity may be saved without operation, if the injury occurs under ordinarily favourable circumstances, and if it does not implicate the main artery, or is not attended with a large flesh wound.

The operations performed in Lucknow during the *whole* siege, upon natives, were more satisfactory than in my melancholy list. My friend, Mr Greenhew, thus details them:—"It will be remarked that two of these amputations were partial,—Heys and Chopart's, of the foot (both were successful). Of the thigh there were ten amputations, of which two recovered; of the leg, seven, of which one recovered; of the shoulder-joint, three, of which one recovered; of the arm, four, of which three recovered; of the forearm, one, which recovered. All the amputations were primary, except four,—three of the arm, and one of the thigh; two of the four recovered.

"There were also three cases of amputation of fingers, two of which did well, while one was followed by mortification and death.

"The causes of death among amputations, as in other cases, may be divided under four heads, viz.:— shock, nine cases; irritation and exhaustion, four; mortification (moist gangrene), two; and tetanus, two. . . . The shock of the operation, in many cases, was no doubt increased, in consequence of there being little or no chloroform; while the degenerated atmosphere of the entrenchment, the want of many necessary comforts, and the generally depressing circumstances of the garrison, made the patients an easy prey to the other causes of mortality.

"It is a curious fact, that the operations performed on the wounded of the force, which, under Generals Outram and Havelock, so gloriously relieved Lucknow on the 25th September, were even more unsuccessful than those performed among the old garrison."[1] It would almost appear, that the original inmates of the garrison had become, so to speak, acclimatized. At Delhi, where the troops were not so much confined, and where supplies were generally abundant, the mortality was much less. Of fifty-three operations, in the Hospital of the 1st Bengal Fusiliers, ten only proved fatal; thirteen of the cases, however, were partial amputations of the hand or foot.[2]

12. *Chloroform.*—This agent was used by me, and every other surgeon of our force, whenever it could be had.

Where chloroform is plentiful, the handkerchief is probably the best inhaler; but it wastes not a little of the chloroform. I, from motives of economy, have been in the habit of using a simple inhaler, invented by my friend, Dr Simpson, civil surgeon of Dacca. It is a small tin instrument, perforated with holes, with a layer of sponge at the bottom, and adapted for the mouth and nose, by its margin being surrounded with chamois leather. It is held in the hand.

[1] *Indian Annals, Medical Science*, No. 10, page 375.

[2] *Indian Annals, Medical Science*, page 378, No. 10.

Some years ago I was struck by the small quantity of chloroform required in operating upon natives, and for some time believed that this susceptibility was a peculiarity of the native, probably from his using less alcohol than an European. I have found, however, as my experience has extended, that Europeans are equally susceptible. In a native, eleven or twelve years old, I have performed lithotomy with certainly not above three drachms of chloroform ; and in a case of amputation of the thigh, I have kept up and produced anæsthesia in an European during the operation, with only 1½ drachms of chloroform. This occurred in H. M. 96th Light Infantry ; Dr Home, surgeon of the regiment, operated. The instrument used undoubtedly saved the chloroform ; but there exists in India a facility in being anæsthetized, which should be borne in mind, otherwise dangerous consequences might ensue, and which is, I am constrained to think, owing to the depressing influence of climate, and the drowsy state which all get into, except in the cold season, and which is probably owing to the imperfect elimination of carbon.

And now I bring these notes to a close, sensible that in many parts they are too profuse, in others too sparing ; but I would only remark, that from the hurried manner in which they have been strung together, condensation is more difficult than the reverse. I only hope that they may be of some service as a contribution to the surgical history of the memorable and arduous Indian campaign of 1857 and 1858.

ARTICLE III.—*Report on the Loss of Limbs, as affecting Longevity, among the Pensioners at the Royal Hospital, Greenwich.* By JOHN C. MESSER, M.D., R.N., Assistant-Surgeon, Greenwich Hospital.

AMONG the pensioners and officers of this establishment there are at present forty who have lost either one or more of their limbs, either in part or wholly. Of these, the following have lost portions of both lower extremities :—

Name.	Present Age.	At what Age Lost.	How.	General Health.
Officer, . .	49	19	Accident.	Good.
W. G., . .	58	...	Do.	Do.
J. C., . .	73	33	Frost-bite.	Fair.
Average age,	60			

There is no ascertained case in which the whole of the lower limb has been lost.

The following have lost a portion of one lower extremity :—

Name.	Present Age.	At what Age Lost.	How.	Which Limb, and Where.	General Health.
Officer,	76	27	Accident.	Left, above knee.	Gouty.
,,	71	13	,,	,, ,,	Fair.
,,	53	21	,,	,, ,,	,,
,,	80	21	,,	,, ,,	,,
J. W.,	71	18	,,	Right, mid. of thigh.	Hypochondriacal.
C. A.,	73	20	,,	R., below knee.	Good.
W. L.,	73	33	,,	R., do.	,,
J. W.,	77	25	,,	R., upper third of thigh.	,,
J. C.,	73	26	,,	R., ,, ,,	,,
J. S.,	56	...	,,	R., ,, ,,	
R. W.,	70	...	,,	R., ,, ,,	
J. T.,	84	...	,,	R., ,, ,,	
J. C.,	46	...	,,	R., ,, ,,	
T. A.,	80	...	,,	R., ,, ,,	
J. F.,	71	...	,,	R., ,, ,,	
J. B.,	26	20	,,	R., mid. of thigh.	Good.
W. B.,	69	...	,,	R., ,, ,,	
C. B.,	72	...	,,	R., ,, ,,	
J. B.,	80	25	,,	Left, upper third of thigh.	Good.
J. S.,	30	29	,,	L., mid. of thigh.	Good.
H. D.,	81	55	,,	L., below knee.	Good.
T. W.,	73	64	Disease.	L., upper third of thigh.	Good.
J. C.,	87	33	Accident.	L., ,, ,,	Fair. Paralytic.
E. A.,	68	...	,,	L., ,, ,,	
R. M'K.,	74	...	,,	L., ,, ,,	Good.
J. T.,	75	...	,,	L., ,, ,,	
R. R.,	82	...	,,	L., ,, ,,	
W. M.,	62	...	,,	L., ,, ,,	
W. M'D.,	82	...	,,	L., ,, ,,	
R. R.,	78	...	,,	L., ,, ,,	
Average age,	69·7				

There is no ascertained case in which both upper extremities have been lost.

The following have lost the whole of one upper extremity :—

Name.	Present Age.	At what Age Lost.	How.	Which Limb.	General Health.
Officer,	74	27	Accident.	Left.	Fair. Gouty.
,,	63	17	,,	Left.	Good.
Average age,	68·5				

The following have lost a portion of one upper extremity :—

Name.	Present Age.	At what Age Lost.	How.	Which Limb, and Where.	General Health.
J. M.,	55	42	Accident.	Left, mid. of humerus.	Epileptic.
R. E.,	82	...	,,	R. hand.	
J. S.,	74	25	Disease.	L., below elbow.	Good.
E. F.,	75	65	Accident.	L., mid. of humerus.	Good.
W. C.,	72	25	,,	R., below elbow.	,,
T. B.,	43	...	,,	R., ,, ,,	,,
Average age,	66·8				

The average age of the above forty is 69·2 years.

The following Table gives a list of pensioners who had lost limbs, and who have died in the Hospital since 1846, with their respective ages :—

Names.	Ages.	Limb Lost.
M. C.,	67	Left lower.
J. D.,	61	,, ,,
J. A.,	80	,, ,,
W. B.,	72	,, ,,
W. S.,	71	,, ,,
E. C.,	72	,, ,,
W. M.,	41	Right ,,
A. P.,	63	,, ,,
M. J.,	79	,, ,,
W. T.,	76	,, ,,
J. F.,	64	,, ,,
J. H.,	73	,, ,,
T. W.,	76	,, ,,
W. B.,	78	,, ,,
J. F.,	88	,, ,,
W. B.,	59	,, ,,
J. G.,	79	Left upper.
J. C.,	63	,, ,,
J. G.,	82	Right ,,
E. B.,	35	,, ,,
T. G.,	72	,, ,,
T. P.,	51	,, ,,
J. J.,	56	,, ,,
T. W.,	63	,, hand.
R. H.,	70	,, upper.
Average age,	67·6	

During the five years, from June 1854 to June 1859, the average age of pensioners dying in Hospital has been 71·3 years.

We have thus the following data:—

Average age at death of all pensioners in five years,	71·3 years.
Average age at death of pensioners who have lost limbs in thirteen years, . . .	67·6 „
Average age of pensioners now alive who have lost limbs, ...	69·2 „

From which we may conclude that the pensioners who have lost limbs do not arrive at so great an age as those who have not, the difference being in the proportion of 71·3 to 67·6. At the same time, we notice that the pensioners now alive who have lost limbs, have a higher average age than those who have died during the last thirteen years under similar circumstances—a fact for which no very adequate reason can be adduced.

GREENWICH HOSPITAL, *June* 1859.

ARTICLE IV.—*Remarks upon the Birth-rate as affecting the Proportion of Deaths under Five Years of Age.* By WILLIAM J. MARSHALL, M.D. and L.R.C.S. Edin.

IN the Registrar-General's Reports, it seems to be assumed that the proportion of deaths of children under five years of age to the whole number of deaths in any town, is a fair index of the mortality among children there, and consequently of the healthy or unhealthy condition of that town. For example, the average proportion of deaths under five to the total deaths during 1857-58 was, in Leith, 46 per cent.; in Greenock and Dundee, 48 per cent.; in Edinburgh and Perth, 36 per cent. From this scale it is inferred that the mortality among children is greater in Leith, Greenock, and Dundee, than in Edinburgh and Perth, and that the former towns are more unhealthy than the latter. This may or may not be so; but the question is, whether the criterion assumed as proving it is sound in principle? From some calculations which I have made, I have a very strong impression that conclusions drawn in this manner are not legitimate, especially with regard to towns in which the excess of births over deaths is much greater than in others, and where, consequently, the population is increasing very rapidly. In such towns, since the proportion of births to deaths is greater, the proportion of deaths under five to the total deaths will also be greater. It is not meant to be affirmed that the greater excess of births is the cause of the greater proportion of infantile deaths in all cases, and without limitation. Various diseases, accidents, and other influences affecting the body, are properly the causes of death; but, so long as these exist, a higher birth-rate will supply a larger proportion of peculiarly susceptible subjects, and so implies a larger proportion of deaths. The question to be solved for each town is, How much of the larger proportion of mortality among children is owing to the greater prevalance of disease and other causes of death; and how much to the more rapidly increasing proportion of subjects more liable to be attacked, and more likely to die? This cannot be determined by merely taking the proportion of deaths under five to the total deaths, without reference to the proportion of births to the total deaths; because, even supposing the rate of mortality were the same in two towns, yet the proportion of deaths under five would be greater in the town in which the proportion of births was greater. This point will be illustrated by the following Table, drawn from the averages for the two years 1857-58:—

	Births.	Total Deaths.	Total Deaths for every 100 Births.
Leith	1221	769	62
Greenock	1886	1176	62
Dundee	3522	2287	64
Edinburgh	5258	3986	75
Perth	791	724	91

This, of course, does not prove that the mortality is less in Leith, Greenock, and Dundee, than in Edinburgh and Perth; but it shows that the rate of increase is much greater in the former towns.

To show how much the rate of increase affects the proportion of deaths under five to the total deaths, let it be assumed that the real rate of mortality among children under five is the same in all the towns—say that, on an average for every 100 births, there are 30 deaths under five—and it will at once be evident, from the last Table, that in the towns with the largest excess of births the proportion of deaths under five will be greater than in the other towns. We may compare in this way Leith and Perth:—

	Births.	Total Deaths.	Deaths under Five.	Deaths under Five to 100 Total Deaths.
Leith . .	100	62	30	48
Perth . .	100	91	30	32

This difference between 32 and 48 deaths under five, to 100 deaths at all ages, is not owing to any difference in the rate of mortality among children under five, for that was assumed to be the same—namely, 30 for every 100 births—and must, therefore, be owing to the greater excess of births in Leith. It will be seen, likewise, that this difference closely corresponds with that deduced from calculating the proportion of deaths under five to the total deaths, without reference to the births. In Leith there were 46 deaths under five to 100 total deaths, and in Perth 36. The fair conclusion, accordingly, seems to be, that there can be little difference in the real rate of mortality among children in these two towns; and that, if there is any, it is in favour of Leith.

The true way to arrive at the relative mortality among children, is to compare the number of children dying with the number of children alive. Not having data for these calculations, I have compared the number of children dying with the number of births; and taking the averages for the same two years, 1857-58, and discarding fractions, the result is as follows:—

	Births.	Deaths under Five.	Deaths under Five to 100 Births.
Leith	1221	357	29
Greenock	1886	569	30
Dundee	3522	1100	31
Edinburgh	5258	1496	28
Perth	791	267	33

This Table shows differences in the rate of mortality among children in these towns, but differences not so great, nor so much to the discredit of Leith, Greenock, and Dundee, as those made apparent by comparing the deaths under five with the total deaths. This will be made plainer by comparing Leith and Perth as below:—

	Total Deaths to 100 Births.	Deaths under Five to 100 Births.	Deaths under Five to 100 Total Deaths.
Leith	62	29	46
Perth	91	33	36

These figures show that, while the real mortality among children was less in Leith than in Perth, yet the proportion to the total deaths was greater by reason of the greater excess of births in Leith.

The mode of calculating the proportion of infantile mortality to the total mortality may, *accidentally*, convey no erroneous impression, when, notwithstanding a considerable rate of increase, there is also really a high mortality among children, as is the case in Glasgow; or when, with a high rate of increase, the mortality among children is really very low, as is the case in Aberdeen. This will be shown by the following figures, drawn from the averages of the same two years, 1857-58:—

	Births.	Total Deaths.	Deaths under Five.	Total Deaths to 100 Births.	Deaths under Five to 100 Births.	Deaths under Five to 100 Total Deaths.
Glasgow	15,847	11,421	6160	72	38	53
Aberdeen	2,398	1,668	529	65	22	33

By either mode of calculation, the mortality is high in Glasgow and low in Aberdeen.

I am quite aware that those who, like myself, are not accustomed to statistics, are very liable to err; but I am very anxious that this subject should be thoroughly sifted by able statisticians. Even although the differences between the two modes of calculating were not so great, and though the foregoing figures were imaginary, yet, since the proportions have been deduced in the same manner throughout, I submit that the principle, for which alone I argue, is established—namely, that the proportion of deaths under five to the total deaths is not *necessarily* a true criterion of the real rate of mortality among children.

The foregoing Tables likewise seem to me to establish the following conclusions:—

1. That when there is a difference in the rate of increase in towns, there will also be a difference in the proportion of infantile mortality, quite independently of any real difference in the rate of deaths among children.

2. That when the rate of increase is high, the proportion of infantile mortality will also be high, although the real rate of mortality may be the same as in a town whose rate of increase is low.

3. That a high proportion of infantile mortality may be owing, either to a greater prevalence and fatality of diseases, or to a more rapidly increasing proportion of peculiarly susceptible subjects.

4. That in order to determine with accuracy the amount due to each, it is not enough to give the proportion of deaths under five to the total deaths, but the proportion of deaths under five to the children alive at that age in each town must also be exhibited.

GREENOCK, 25th Feb. 1860.

ARTICLE V.—*Statistics of Prisoners: their Diseases and General Health.* By J. B. THOMSON, L.R.C.S. Edin., Resident Surgeon, General Prison for Scotland at Perth.

No. II.

PHYSICAL suffering is almost wholly ignored by the present system, or, as it has been termed, Science of Penology; and since the days of Howard and Romilly, there has been, in the treatment of criminals, a gradual tendency to amelioration. The new system professes to be probationary and reformatory, more than penal—curative, rather than retributive.

Tully has long ago said, "Omnis et animadversio et castigatio contumelia vacare debet. Prohibenda autem maxime est ira in puniendo." Accordingly, it is adopted as a maxim, and believed to be founded upon a wise social and Christian economy, that the criminal is entitled to be returned to society, after his sentence has been carried out, as well in body and mind as when he entered upon his imprisonment.

In conformity with these views, prisoners have the benefit of the most liberal and scientific sanitary conditions.

The prison structural arrangements afford ample provision for due ventilation and regulated temperature. The exercise for adults extends from an hour to nearly two hours daily; convicts have the benefit of an open airing-yard with concentric circles, and a lesser circle for the aged and infirm; and the recreation of juveniles is still more extensive, being drilled to military movements in an open court-yard.

The dietary (of which more remains to be said) is good in quantity and quality, and the surgeon possesses large discretionary powers to vary and extend it *ad libitum.* Altogether, the means and appliances in favour of promoting and preserving health, display a care and skill worthy of an enlightened legislation.

It has been said that the present adequate, and the former semi-starvation plans, are alike *in extremis;* and we are told, in the words of Hale, "*that when inclined to pity the prisoner*, we have forgotten that *there is likewise a pity due to the country.*" But any one who studies the constitutions of the criminal classes, their diseases of a cachectic and chronic nature, and the wearing out of the powers, bodily and mental, of convicts, through the

> "Long years! it tries the thrilling heart to bear,"

must admit the necessity of a generous dietary, and careful hygienic treatment. I lately had, in the English prisons, an opportunity of tracing the effects of prison life through the probationary and reformatory stages, up to the most extended relaxations allowed, at the Refuge of Fulham; and it was strongly borne in upon me by my observations there, as well as my experience here, that convicts require all the exertions now made for them, medical and moral, in order to carry them safely through their long years of prison seclusion and servitude.

The following statistics confirm me in this opinion :—

Table of Diseases and Deaths of Prisoners in the General Prison during the Decennial Period 1850 *to* 1859, *inclusive* :—

Diseases.	1850.	1851.	1852.	1853.	1854.	1855.	1856.	1857.	1858.	1859.	Total Diseases.	Total Deaths.
Zymotic Class.												
Scarlatina	...	...	...	...	...	...	...	...	1	...	1	...
Diarrhœa	22	25	17	15	65	20	4	40	...	13	221	3
Influenza	18	16	16	8	5	13	11	11	5	...	103	1
Scurvy	3	2	5	4	1	2	...	3	2	1	23	1
Ague	1	...	...	...	...	...	2	1	1	...	5	...
Erysipelas	1	...	1	1	1	1	1	...	2	1	9	...
Syphilis	6	3	6	6	2	5	6	11	7	4	56	...
Condylomata	...	...	1	...	...	1	...	...	1	...	3	...
Puerperal Fever	...	...	...	...	...	1	...	...	...	...	1	...
Chicken Pox	...	...	...	...	...	1	...	...	...	1	2	...
Tubercular Class.												
Scrofula	3	4	4	5	2	5	2	5	4	7	41	1
Phthisis	3	1	4	7	7	6	8	7	4	3	50	22
Marasmus	...	...	...	2	...	...	...	...	...	...	2	2
Of Nervous System.												
Apoplexy	1	1	...	1	...	...	1	...	...	...	4	...
Paralysis	...	...	...	...	2	...	1	1	3	1	8	2
Brain Disease	...	...	...	1	...	...	3	...	...	1	5	4
Hysteria	...	...	1	...	...	...	1	...	...	1	3	...
[1] Epilepsy	...	...	...	...	...	...	...	...	...	...	...	...
[1] Decay from Insanity	...	...	...	...	...	...	...	...	...	...	...	6
Of Circulation.												
Heart	...	2	...	1	...	...	2	1	2	2	10	4
Pericarditis	...	...	...	...	...	...	...	...	...	2	2	1
Aneurism	...	...	...	1	...	...	1	...	...	1	3	1
Syncope	...	...	...	...	...	...	...	1	1	...	2	...
Ophthalmia	2	...	...	1	1	1	...	...	...	...	5	...
Of Respiration.												
Bronchitis	1	1	...	1	...	2	2	...	8	4	19	3
Pleuritis	1	2	2	3	...	...	1	4	...	3	16	...
Pneumonia	1	4	3	1	...	1	1	...	2	...	13	4
Asthma	1	2	1	1	...	1	3	4	3	3	19	2
Hæmoptysis	...	1	...	1	...	...	1	1	2	4	10	1
Hydrothorax	...	...	...	...	...	...	1	1	1	...	3	1
Of Digestion.												
Epistaxis	1	...	1	...	...	3	...	1	...	1	7	1
Quinsey	1	...	1	1	...	...	...	...	3	1	7	...
Dyspepsia	3	4	1	2	...	2	2	...	6	4	24	...
Enteritis	...	...	...	1	...	...	...	...	1	1	3	2
Carry forward	69	68	64	64	86	65	54	92	59	59	680	62

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[1] The cases of Epilepsy and Insanity will appear under the head of Mental Diseases.

Table of Diseases and Deaths of Prisoners—(continued).

Diseases.	1850.	1851.	1852.	1853.	1854.	1855.	1856.	1857.	1858.	1859.	Total Diseases.	Total Deaths.
Brought forward	69	68	64	64	86	65	54	92	59	59	680	62
Of Digestion (contd.).												
Ascites	...	...	...	1	...	...	...	1	1	...	3	...
Ulcer of Intestines	...	...	...	...	...	...	...	1	1	...	2	...
Hernia	...	...	...	...	...	...	...	...	1	1	2	...
Hæmatemesis	1	2	...	1	1	...	3	4	2	2	16	1
Hæmorrhoids	...	...	...	...	...	...	1	...	...	2	3	...
Constipation	...	...	3	...	...	...	1	3	1	...	8	1
Hepatitis	...	...	...	1	...	...	...	...	...	...	1	...
Of Locomotion.												
Rheumatism	1	...	4	...	2	3	1	4	5	3	23	...
Sciatica	...	...	...	...	...	...	...	1	1	2	4	...
Gout	...	...	...	...	...	...	...	1	...	...	1	...
Of Urinary and Generative Organs.												
Stricture of Urethra.	2	1	...	...	...	1	...	...	3	1	8	...
Fistula of Urethra	...	...	...	...	1	...	...	...	1	1	3	...
Gonorrhœa	1	...	...	...	...	1	...	1	2	3	8	...
Testitis	...	...	...	...	...	1	...	...	1	3	5	...
Hydrocele	...	...	...	...	...	...	...	...	1	1	2	...
Masturbation	...	1	...	...	...	...	...	...	...	2	3	...
Bright's Disease	...	...	...	1	...	...	...	...	...	...	1	1
Cystitis	...	...	...	...	...	1	...	...	...	...	1	...
Cancer Uteri	...	...	...	...	...	...	2	...	1	1	4	2
Ulcer Uteri	...	...	...	2	...	...	1	...	1	1	5	...
Menorrhagia	1	1	2	2	...	...	3	...	1	3	13	...
Polypus Uteri	...	...	...	...	...	...	...	1	1	...	2	...
Of Skin.												
Ulcer	1	2	4	6	...	10	2	2	8	6	41	...
Abscess	1	...	2	3	...	2	2	...	3	4	17	...
Itch	2	2	2	6	...	5	...	3	2	4	26	...
Ringworm, etc.	...	...	...	...	...	1	...	2	1	4	8	...
Favus	1	...	...	1	...	1	2	...	1	2	8	...
Pediculi	...	...	...	...	...	...	...	...	1	2	3	...
Anomalous Eruption	...	...	...	...	...	...	...	1	...	1	2	...
From Accidents, etc.												
Burns and Bruises	...	...	...	...	...	...	2	...	3	2	7	...
Fracture	2	1	...	...	...	...	2	...	1	1	7	...
Sprains	...	...	...	1	...	...	...	...	2	...	3	...
Wounds	2	...	1	...	1	...	2	1	...	1	8	...
	84	78	82	89	91	91	78	118	105	112	928	
Worn Out, with no Special Disease..	6	2	1	4	5	6	8	8	5	2	47	11
Suicides	...	1	1	...	...	...	1	...	...	...	...	3
Old Age	...	...	...	...	...	...	...	...	1	...	...	1
Unknown	...	...	1	...	...	...	...	...	...	...	...	1
												83

Referring to the foregoing Table of Diseases, it is proper to notice that it is a transcript from the Register of Sickness, containing all cases requiring to be prescribed for two days consecutively. It does not comprehend those for whom a single occasional dose of medicine is ordered *pro tempore.* Of the cases,

The number slightly ill were,	602
,, seriously ill,	326
Diseases contracted before admission,	280
,, after admission,	648

The proportional number of cases, and the per-centage of disease and death in the two sexes, are subjoined:—

Average Daily Prison Population. 1850–1859.			Number of Prisoners under Disease. 1850–1859.			Number of Deaths. 1850–1859.		
Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
3784	1376	5160	678	250	928	51	32	83

This gives the per-centage of diseases and deaths:—

Per-centage of Diseases.		Total Per-centage of Disease.	Per-centage of Deaths.		Total Per-centage of Deaths.
Males.	Females.		Males.	Females.	
17·9	18·1	17·9	1·3	2·3	1·6

It thus appears that the per-centage of disease, and the per-centage of deaths, is higher considerably in the female than in the male prisoners. This is accounted for chiefly by the large proportion of female convicts, since 1855, who have been here—a class of prisoners who may be expected to be liable to serious illness.

The ages of disease and death were:—

Ages.	Cases of Disease.	Deaths.
10 and under 15,	49	5
15 ,, 20,	192	14
20 ,, 30,	388	28
30 ,, 40,	175	17
40 ,, 50,	85	9
50 ,, 60,	32	6
60 ,, 70,	5	2
70 and upwards,	2	2

The diseases and deaths occurred in the following months, viz.:—

	Diseases.	Deaths.
January,	66	10
February,	62	9
March,	64	7
April,	64	5

	Diseases.	Deaths.
May, ...	83	7
June, ...	83	6
July, ...	67	8
August, ...	72	4
September, . . .	96	9
October, ...	95	4
November, . . .	77	9
December, . . .	99	5

Abstract of the Number of Cases of Disease and Death during the Decennial Period 1850–1859, *as Classified Nosologically.*

Diseases.	No. of Cases of Disease.	No. of Deaths.
Zymotic Class, ...	424	5
Tubercular, ...	93	25
Of Nervous System, ...	20	12
Circulation, ...	22	6
Respiration, ...	80	11
Digestion, ...	76	5
Locomotion, ...	28	None.
Urinary and Generative Organs, . .	55	3
Skin, ...	105	None.
Accidents, etc., ...	25	None.
Worn Out, ...	47	11
Suicides, ...	...	3
Old Age, ...	...	1
Unknown, ...	...	1

I beg to offer a few remarks upon each of the classes of disease as arranged in this table:—

I. *Zymotic Diseases* form a considerable quota of the cases registered, but their number and severity are trifling compared with what appeared in this locality beyond the prison in the same years, and the deaths have been only 5 in ten years. The following table, from the Reports of the Registrar-General, for 1856–7–8–9, proves that epidemics are frequent and fatal in the city of Perth, contrasted with what takes place in this prison:—

	1856.	1857.	1858.	1859.	Total Deaths in 4 Years.
Scarlatina, . .	13	161	36	10	220
Hooping-cough, .	29	7	22	43	101
Croup, ...	29	26	17	10	82
Diarrhœa, . . .	15	25	15	17	72
Typhus, . . .	11	15	11	15	52
Measles, . . .	2	2	29	...	33
Dysentery, . . .	8	8	5	7	28

There has been no case of typhus nor dysentery here, and the cases of diarrhœa seem to have been persons broken down in constitution, and the deaths can scarcely be attributed to epidemic influence. The facilities for complete separation and isolation of any prisoner attacked by a contagious or infectious fever, the careful attention to ventilation and cleanliness, and the partially elevated position of the General Prison, all help to explain our singular immunity from epidemics. Diarrhœa prevailed during the months of August, September, and October in 1854, when cholera broke out in Perth and the country all around, but our prisoners were passed over. In 1849, when cholera raged in Perth, only 12 cases of diarrhœa are reported to have occurred in this prison, and no case of cholera. In 1855, when influenza and diarrhœa were very prevalent and fatal in the surrounding districts, several were smartly attacked, but only one died. In 1856–7–8–9, epidemics were at times severe in the city of Perth, but their visitation was very slight indeed among our inmates.

Scurvy, in the course of ten years, gives 23 cases and 1 death. This fatal case was J. H. G., æt. 36, of weakly constitution, and having undergone frequent imprisonments. Although scurvy was epidemic in prison in 1846, there were no fatal cases, and only one death has taken place since the opening of the General Prison in 1842. I have examined into the character of all the cases of scurvy, and without reporting these *in extenso*, I may give the conclusions to which I have been led, viz.:—

a. That a dissipated life may induce this disease, when there is no epidemic influence abroad.

b. That in certain classes of prisoners a general debility and a vitiated state of the blood begets scurvy.

c. That a very slight change in diet (such as the substitution of treacle for milk) may induce this disease in prisoners.

d. That, with some few exceptions, milk and animal food freely given will restore the blood to a healthy condition, and cure scurvy.

The cases of ague were contracted before admission by persons who had travelled in malarious countries. Considering the depraved constitutions of prisoners in general, erysipelas is by no means a common disease among them. In almost every case I have looked upon it as a blood disease, and have found uniformly the free use of the Tct. Mur. Ferri as almost specific, accompanied with laxatives and alteratives.

Syphilis might well be looked for here; and we have 54 cases on the register. Besides these, we have a great many in the secondary and tertiary stages, who require only regimen, cleanly habits, and diet. It happens that almost all this class admitted have previously passed through a course of active treatment before or after trial.

Condylomatous appearances, occasionally met with, suggest ideas of the gross and disgusting habits of some of our criminals, female as well as male; and, upon the whole, the Table of Diseases gives no adequate view of the amount of syphilis, because many of the cases require only dietetic treatment.

II. *Tubercular Diseases* rank comparatively high among the diseases of prisoners, showing on our Decennial Record 93 cases of disease, and 25 deaths.

Out of 41 cases of scrofula, there was only 1 death. Scrofula was, under the semi-starvation diet, and close, damp cells of former times, the opprobrium of prison discipline. Enlarged glands were, and still are, called "*prison lumps*." But there can be little doubt that scrofula is not at all the virulent disease it once was to prisoners. When visiting the prisons in and around London, and also in Wakefield, I saw this malady in the severe forms it used to wear; but it lingers chiefly in the lowest dens and polluted hovels of the criminal population of large cities. The cases seen here are mild, and amenable to cure. Under the effects of the generous diet and cod-liver oil freely allowed, I find in a few weeks a manifest improvement in the worst cases. Of course, in all such, the prevention of vicious indulgences, as well as the positive benefits of regimen and diet, has much to do with their improvement.

Phthisis presents 50 cases, and out of these, 22 deaths. I consider that phthisis can be treated in prison most successfully. The improvement in phthisical cases has in several instances been such as to completely arrest its progress, and there is reason to hope that cures have been effected. The explanation of this is, that in the dry, equable temperature, in the absence of all exposure to sudden atmospheric changes, under the most stringent rules of diet, exercise, and medical appliances, we have the best means of checking this intractable malady. To these favourable influences patients can be subjected more rigorously in prison than in common life. The number of cases, compared with the number of deaths, proves this position; and it will be seen that, notwithstanding of the depraved customs of criminals, it is shown that the fatality of chest complaints in this prison and in civil life are nearly the same—the difference being merely fractional.

III. *Diseases of the Nervous System* are of paramount importance among prisoners; but these will fall to be noticed more particularly when we come to treat of mental diseases.

IV. *Diseases of the Organs of Circulation* show 22 cases, and 6 deaths. Passive hæmorrhages from the bowels and uterus are common among prisoners; but as these require only an occasional prescription, they do not appear on the register of sickness. Menorrhagia, with irregular uterine discharges, are especially common to female prisoners, and not unfrequently accompany or precede a breaking down of the whole system. Epistaxis is not uncommon; and, besides 1 death having happened from it, I have repeatedly seen very narrow escapes. I am satisfied that the blood in prisoners is subject to many morbid alterations. The previous life, and perhaps continued confinement, have poisoned and polluted the circulating current. Necræmia, or death by depravation of the blood, accounts, I think, for several of those deaths called "worn-out," in which no particular organ, but the whole system, seems implicated. In such cases, we see the vascular system failing, the colour of the skin cachectic, nervous system torpid, voluntary power feeble, the brain oppressed, the intellect fatuous, breath putrid, and, in fine, a tendency to decomposition almost before the cessation of life. Frequent attacks of syphilis, sensual excesses, low living, and the abuse of mercury, are likely enough to induce this depraved state of the vital stream.

V. *The Organs of Respiration* number 80 cases of disease, and, the 50 cases of phthisis being added, 130 in all. Apart from phthisis, the deaths are 11; added to phthisis, 33 *in toto*. Inflammatory diseases of this class are difficult of treatment. Pneumonia seldom admits of active depleting remedies; and, in spite of generous diet and cordials, the patient generally sinks under such attacks.

Asthma, in a chronic form, is common in prison, and occasionally fatal.

Sudden atmospheric changes readily affect prisoners. Their cells, clothing, etc., are all satisfactory; but their habits of body are relaxed, so that slight changes affect them, like hothouse plants.

VI. *Diseases of the Organs of Digestion* must seem surprisingly few; but many not requiring continuous treatment are not put on the sick register; and after being a few months here, the regimen, and the absence of all injurious agencies, restore the weakened digestion rapidly. Dyspepsia, therefore, like phthisis and scrofula, find in prison adjuvants to the system salutary and ameliorating.

VII. *The Organs of Locomotion* require little observation. Rheumatism in a chronic form is very common, as the result of dissipation, syphilis, and mercurialization. The hydrodate of potash seems generally indicated, and is often serviceable.

VIII. *Diseases of the Urinary and Generative Organs* are a class of diseases common to prisoners. The numbers on the register are not great; but very many cases suffer now and then, which do not require to be placed on the sick list. The prisoners have generally undergone treatment for their complaints in other prisons before admission here.

IX. *Diseases of the Skin* are frequent in prison, and there are trifling anomalous eruptions which are peculiar to prisons. Ulcers and abscesses often betray a cachectic state of the system. Itch in various stages is often met with, having generally been partially cured elsewhere. Some singular cases have come under my notice, of itch breaking out, after having lain dormant in the prisoners' system for months. The late Dr Malcom was familiar with such cases; and the common opinion is probably wrong, that the incubation period of itch is confined to a few days. Anomalous eruptions occur in prison from confinement; and in these, treatment is of no value.

The *Number of Casualties* during the ten years under review is very small, and require little notice. The suicides took place by one throwing himself from the upper gallery to the ground floor, and the other two from hanging.

Of the general treatment of the diseases of prisoners I have a word or two to offer. In almost all instances the cases are chronic, and of an asthenic character, the vital force low, the constitution poor and exhausted. In many cases, too, there is nervous debility, and a depression of the animal spirits. The dreary prospect of long years of hopeless imprisonment, the burden of a wounded spirit and worn-out body, are not easily borne. Under such circumstances, the medical attendant has a very different course of treatment to pursue from what is indicated in everyday life. Antiphlogistic treatment is almost wholly out of the question. Bleeding by the lancet I have not found expedient once in a twelvemonth. Even a few leeches and a blister are often followed by marked sinking. Mercury and antimonials can only be carried to a moderate extent without manifest injury; and, among our patients, the disciples of Bennett and Inman might very safely pursue their new theory and practice of medicine.

From our analysis of the diseases of prisoners in the General Prison, it appears :—

1st, That zymotic diseases are less frequent and fatal in prison than in common life.

2d, That, in severity, tubercular diseases rank the highest; afterwards, nervous affections; and next, cases "worn-out" by premature and general decay.

3d, That phthisis, in its fatality, is within a fraction the same as reported by the Registrar-General among the ordinary population, and that a number of the cases are improved by the regimen of the prison.

4th, That scrofula, and other diseases of debility, are frequently benefited by the careful diet and treatment to which they are subjected.

5th, That the diet and prison discipline are in little or no degree chargeable with the diseases of prisoners; but the causes are in general a life of dissipation.

6th, That the diseases are generally of a chronic and cachectic character, and can only be successfully treated by a due regard to keeping up the system by generous diet and cordials.

In my next paper I propose to show the general health, as indicated by appearance, weights, etc.

ARTICLE VI.—*Quarterly Report of Cases occurring at the Edinburgh Eye Infirmary*, 140, *George Street.* By BENJAMIN BELL, Esq., F.R.C.S.E., and PATRICK HERON WATSON, Esq., M.D., F.R.C.S.E.

April 1*st to June* 30*th*, 1860.

Tumours of Eyelids,	2
Wounds, Inflammation, Abscess of Do.,	3
Hordeolum,	3
Ophthalmia Tarsi, etc.,	9
Trichiasis,	3
Epiphora,	3
Do. from Everted Punctum,	5
Inflammation of Lachrymal Sac, Fistula, etc.,	8
Strabismus,	1
Ophthalmitis,	1
Oscillation of Eyeball,	2
Wounds of Conjunctiva, Foreign Bodies under Lids,	2
Pterygium, Fatty Tumours of Conjunctiva, etc.,	4
Inflammation of Conjunctiva, Acute,	19
Do. do., Chronic,	23
Do. do., Catarrhal,	1
Do. do., New-born Infants,	1
Do. do., Muco-purulent,	2
Do. do , Phlyctenular and Pustular,	33
Do. do., Strumous,	5
Granular Conjunctiva of Palpebræ,	4
Wounds of Cornea, "Fires," etc.,	8
Inflammatory Affections of Cornea,	16
Abscess of Cornea, Hypopion,	2
Ulcers, Vascular Speck of Cornea,	6
Opacities of Cornea,	8
Inflammation of Iris,	3
Synechia, Anterior and Posterior, Opacities of Capsule,	6
Cataract, Idiopathic,	4
Dislocation of Lens from Injury,	1
Myopia,	3
Presbyopia,	2
Hemeralopia, or Night-blindness,	3
Amaurosis, Glaucoma, Retinitis, etc.,	21
Cases not Classified,	5
	222

Amaurosis depending on a Cerebral Cause.—The following case is at once interesting and suggestive, on account of the unlooked-for readiness with which amaurotic symptoms of long standing yielded to treatment. The patient, a well-grown, healthy-looking youth of twenty-two, from Caithness, had been quite incapacitated for any useful occupation during four years, and came south in the hope of something being done for the restoration, or at least the improvement, of his sight. With his right eye he could see a little, but very imperfectly; with his left, absolutely nothing. Both pupils were somewhat dilated and sluggish. In other respects, the eyes had a healthy appearance, and, when examined with the ophthalmoscope, the *retinæ* and transparent media were found perfectly normal. These facts evidently pointed to some cause within the head for the amaurotic symptoms; and, upon inquiry, it was ascertained that they had followed an attack of continued fever, and that he still suffered habitually from more or less pain in his head, particularly in the upper and frontal regions. The hope of restoring sight was very slender; but, as he had come so great a distance, the scalp was shaved, and a large blister applied transversely from ear to ear. It discharged very freely, and, next day, vision in both eyes was so remarkably improved, that he could clearly discern a small dog running across the street at some distance, and, instead of requiring to be led, as previously, could walk about the house, which was strange to him, with confidence. There was no relapse. Several blisters were applied in succession to different parts of the scalp; the uneasiness in the head ceased, and a progressive but comparatively slow improvement took place in his power of vision. He returned home in a few weeks, very thankful for the benefit received, and expecting to be able to follow certain out-door occupations, although his eyesight was still insufficient for discerning ordinary print.

Since the foregoing was written, a note has been received from the patient, in which he says, "I am able to read with care and attention. I feel much improved."

ARTICLE VII.—*On the Manufacture of Castor Oil at Dinapore.* By J. BALFOUR, Esq., Officiating Deputy Inspector-General of Hospitals.

THE seeds, as purchased, are first winnowed; then sorted into three sizes—large, middle, and small; all stones and dirt picked out, and the seeds laid by handfuls (30–40) on a block, and struck a sharp blow with a wooden mallet, about nine inches long, four broad, and three quarters of an inch thick, with a handle at one end. The shells being thus broken, they are winnowed again, and part of the broken shell blown off; they are next screened through a network of rattan, the frame being placed on a gentle slope, and the seeds worked through it partly by the hand; all seeds with unbroken shells picked out, and also all kernels not perfectly clean and white. All that are fit are now passed through a sort of large coffee-mill and roughly broken; they are once more hand-picked, and all coloured particles removed. The clean kernels are then reground in a finer mill, and reduced to a perfect pulp, and again carefully searched for any coloured particles, which are taken out. The pulp is now folded up in strong canvas, in quantities of lbj. in weight, and packets about a foot long by four inches wide; these are placed under a press with a fly-wheel, and fitted with a mould beneath, in which each packet is jammed into a regular shape. The packets are now laid out in the sun to warm, along with iron plates, similar in shape, but a little longer and broader, and notched at each end. When thoroughly heated, they are taken to the press,—a most simple machine, consisting of a framework supporting two iron bars, one above and one below, which fit into the notches of the plates, and a screw in the centre worked by a lever from each end. The packets of pulp are arranged alternately with the plates; an iron plate being, of course, always on the outside at each end. The oil squeezed out is caught in a tin trough, and conducted to a receiving vessel.

In the cold weather, when the sun has not power enough to heat the pulp and plates, a charcoal fire is lighted for that purpose; but this is said to darken the oil.

The oil is now taken to another room, and placed in earthen vessels over a sharp but not large fire, and boiled (to coagulate the vegetable albumen); it is then cooled, and again brought almost to the boiling point. This part of the process is considered the most delicate part of the manufacture, and to require much judgment. The oil is now strained through several folds of American drill; and after that, twice or oftener through bibulous paper of indigenous manufacture.

The success of the process appears to depend on the perfect purity of the nuts, of which only the largest and whitest are used for the best oil, and also on the care bestowed on the boiling and filtering processes.

DINAPORE, *June* 27, 1860.

ARTICLE VIII.—*Case of Rupture of Ascending Aorta.* By F. R. MACDONALD, M.D. Edin.; Member Medico-Chirurgical Society of Edinburgh; Parochial Surgeon, etc., Inverary.

P. Q., an Irishman, about 40 years old, employed at a granite quarry ten miles from Inverary, while conversing with his wife on the morning of Sunday, 22d July last, suddenly gave a groan and expired. With the exception of a transient feeling of faintness, experienced when at work a few months before, and relieved by a little water, the deceased was never known to have enjoyed other than excellent health. The investigation, which the authorities ordered to be made, satisfactorily declared the cause of death; and, though several cases of a similar lesion are on record, the following brief notice may not be unacceptable:—

On opening the pericardium, it was found full of blood, so firmly coagulated as to admit of being removed entire. The contents of the heart had escaped through the ascending aorta, in which there was found a longitudinal opening fully one inch in length. The arterial coats were completely divided. The aorta was in an atheromatous condition throughout.

INVERARY, *5th September* 1860.

Name.	Latin.	Greek.	French.
Oxford Mid. Class Examinations.	Cæsar, Bell. Gall. IV.-VI.	...	...
University of Cambridge. Preliminary Examination.	Cæsar; Virgil, Æneid; a passage for translation from some other Latin Author.	Xenophon's Anabasis; Iliad, Book XVIII.; and an easy passage from some other Greek author.	...
University of London. Matriculation Examination.	Virgil, Georgics, Æneid.	Xenophon.	French or German. Translation into English.
University of Durham. Preliminary Examination.	Virgil, Æneid.	...	French or German.
University of Edinburgh. Preliminary Examination.	Cicero, De Nat. Deorum. Celsus; Virgil, Æneid.	...	...
University of Glasgow. Preliminary Examination.	Latin.	Greek.*	French.*
University of St Andrews. Preliminary Examination for Candidates who commenced their studies on or after October 1860.	Cicero, De Natura Deorum.	...	...
University of Aberdeen. Preliminary Examination.	From prescribed Authors.	...	...
Trinity College, Dublin. Entrance Examination.	1. Livy, B. 3, 4. 2. Virgil, Æneid, B. 1, 2, 3, 6. 3. Sallust. 4. Horace, Odes. 5. Hor., Satires and Epistles. 6. Terence, Andria and Heautontimorumenos.	Homer, Iliad, B. 1, 2, 3. Gospels St Luke, St John; Acts. Euripides, Phœnissæ. Sophocles, Ajax. Plato, Apologia Socratis. Lucian, Walker's Selections. Xenoph. Anab., B. 1, 2, 3.	...
Queen's College, Belfast. Matriculation Examination.	Horace, Odes and Satires. Quint. Curt.; Virgil, Æneid. Livy, Books I. and II.; Sallust, Cæsar.	Homer's Iliad, B. I. and II.; Euripides' Alcest.; Xenophon's Anab.; Lucian, Walker's Selections.	...
Queen's College, Cork. Matriculation Examination.	Virgil, 1st Book of Æneid. Latin Prose. Cæsar's Gallic War, Book I.	Xenophon, 1st Book of Anabasis. Grammar.	...
Queen's College, Galway. Matriculation Examination.	Ditto.	Ditto.	...
Royal College of Physicians, Edinburgh.	Bellum Jugurthinum of Sallust.	...	...
King's and Queen's Coll. of Phys. of Ireland.	Virgil's Æneid, Bs. 1 and 2. *Or* Sallust. *Or* Cæsar, de Bell. Gall., B. 1 and 2.	Homer's Iliad, B. 1. *Or* Xenophon's Anabasis. *Or* Walker's Lucian, 12 Dialogues.	...
Royal Coll. Surgeons, England. Preliminary Examination.	1st Book of Cæsar, Com.; De Bel. Gal.	St John's Gospel.	...
Royal College of Surgeons, Edinburgh.	Bellum Jugurthinum of Sallust.	...	...
Royal College Surgeons, Ireland.	Virgil, Æneid, first Five Books.	St John's Gospel.	...
Faculty of Phys. and Surgs., Glasgow. Preliminary Examination.	1st or 2d Book of Cæs., De Bello Gallico.	...	...
Apothecaries' Hall, London. Preliminary Examination.	Cicero, Pro Lege Manilia. Horace, Odes.	Gospel of St John. 3d Book of Iliad.	...
Apothecaries' Hall, Ireland. Preliminary Examination.	Sallust. Æneid of Virgil.	Gospel of St John. Dialogues of Lucian. Or 1st two B. of Iliad.	Telemachus, or History of Charles XII.

German.	English.	Religion.	Logic.	History.
...	...	...	...	...
...	Rudiments of Grammar.	...	...	Outlines of, since Conquest.
French or German. Translation into English.	Orthography, Grammar, and Composition.	...	...	History of England to end of 17th Century.
French or German.	...	Scripture History.	...	...
...	...	...	...	...
German.*	English.	...	Logic.*	...
...	English.	...	...	...
...	English.	...	...	...
...	...	...	...	...
...	Grammar and Composition. English.	...	...	Roman Outlines, up to the Death of Nero.
...	Grammar.	...	...	...
...	Grammar and Composition.	...	...	Outlines of Grecian and Roman.
...	Composition.	...	...	...
...	Composition.	...	...	...
1st Two Books of Schiller's "Geschichte des Dreissigjährigen Kriegs."	English Grammar and Composition.	...	...	Outlines of Succession of Sovereigns, and Leading Events of each Reign.
...	Grammar and Orthography.	...	...	...
...	...	...	...	...
...	...	...	...	...
...	...	...	...	...
...	Composition.	...	...	...

Name.	Natural History.	Geography.	Euclid.	Algebra.
Oxford Mid. Class Examinations.	...	...	...	14 Questions in Plane Trigonometry, and Use of Logarithms.
University of Cambridge. Preliminary Examination.	...	Geography.	Books 1 and 2, and 3, 4, and 6.	Algebra to Simple Eqns., inclusive.
University of London. Matriculation Examination.	...	Modern Geography.	First Four Books.	...
University of Durham. Preliminary Examination.	...	...	Books I. and II.	...
University of Edinburgh. Preliminary Examination.	...	...	...	...
University of Glasgow. Preliminary Examination.	Natural History.	...	...	Elements of Mathematics.
University of St Andrews. Preliminary Examination for Candidates who commenced their studies on or after October 1860.	...	...	Elements of Mathematics.	Elements of Mathematics.
University of Aberdeen. Preliminary Examination.	...	...	Three Books.	To Simple Equations, inclusive.
Trinity College, Dublin. Entrance Examination.	...	...	...	...
Queen's College, Belfast. Matriculation Examination.	...	Ancient and Modern.	1st and 2d Books. Examination conducted orally.	Expln. and Use of Algeb. Signs, + − × ÷ = etc., etc.
Queen's College, Cork. Matriculation Examination.	...	...	Book I.	...
Queen's College, Galway. Matriculation Examination.	...	Outlines of Ancient and Modern.	Book I.	Algebra.
Royal College of Physicians, Edinburgh.	...	...	1st and 2d Books.	To end of Simple Equations.
King's and Queen's Coll. of Phys. of Ireland.	...	...	1st Book.	...
Royal Coll. Surgeons, England. Preliminary Examination.	...	Of Europe, and particularly of British Isles.	...	...
Royal College of Surgeons, Edinburgh.	...	...	1st and 3d Books.	To end of Simple Equations.
Royal College Surgeons, Ireland.	...	...	...	...
Faculty of Phys. and Surgs., Glasgow. Preliminary Examination.	...	...	Geometry, to end of 3d Book.	To end of Simple Equations.
Apothecaries' Hall, London. Preliminary Examination.	...	...	1st Book of Elements.	To Simple Equations.
Apothecaries' Hall, Ireland. Preliminary Examination.	...	...	1st Two Books.	Including Simple Equations.

Arithmetic.	Geometry.	Mechanics.	Hydrostatics, etc.	Remarks.
Elements of.	9 Questions in Practical Geometry.	About 20 Questions.		
First Four Rules V. Fractions, Practice, and Rule of Three.	...	Questions, embracing Proofs of Leading Propositions.		
Ordinary Rules.	...	Compn. and Resoln. of Statical Forces, Laws of Motion, etc.	Hydrostatics, Hydraulics, and Pneumatics.	Also Optics, Acoustics, and Chemistry.
Arithmetic.	...	Elements of.	Elements of.	Do.
...	...	...	...	
...	...	Elements of.	...	Two of the subjects marked thus *, in addition to the others, are imperative.
Elements of Mathematics.	...	Elements.	...	Additionally on any two of the following:—Greek, French, German, Higher Mathematics, Natural Philosophy, Natural History, Logic, and Moral Philosophy.
...	...	Elements.	...	Ditto.
...	...	...	...	No Examination in Natural Philosophy.
Vulgar and Decimal Fractions, Practice, Proportion, etc., etc.	...	...	...	Candidates may select any two of Greek and Latin Subjects.
Principles of Notation, Vulgar and Decimal Fractions.	...	...	...	
1st Four Rules, Fractions, Rule of Three, etc., etc.	...	...	...	Candidates for M.D. must have attended Six Months' Course of Natl. Philosophy.
To end of Decimal Fractions.	...	...	...	
To end of Decimals.	...	...	...	
First Four Rules of Vulgar Fractions.	...	...	...	Candidates will be Examined only on one of the first three Subjects.
To end of Decimal Fractions.	...	Elements.	...	
...	...	...	...	
To end of Decimals.	...	Elements.	Elements.	
...	...	...	...	No Examination in Natural Philosophy.
Arithmetic, to Decimals.	...	...	...	

MEDICAL SCHOOLS

WINTER

	Anatomy, Systematic and Practical, with Demonstrations.	Physiology, or Institutes of Medicine.*	Chemistry, and Practical Chemistry.	Materia Medica and Therapeutics.	Practice of Physic.
University of Edinburgh.	Professor Goodsir.	Dr Bennett.	Dr Playfair.	Dr Christison.	Dr Laycock.
Surgeons' Hall, Edinburgh.	Dr John Struthers.	Dr Sanders.	Dr Macadam. Dr Murray Thomson.	Dr Maclagan.	Dr Gairdner.† Dr W. Begbie.†
University of Glasgow.	Dr A. Thomson.	Dr A. Buchanan.	Dr T. Anderson.	Dr Easton.	Dr M‘Farlane.
Anderson's Uni., Glasgow.	Dr George Buchanan.	Dr E. Watson.	Dr Penny.	Dr Morton.	Dr A. Anderson.
University of Aberdeen.	Prof. Lizars.	Dr Ogilvie.	Dr Fyfe. Mr Brazier.	Dr Harvey.	Dr Macrobin.
University of St Andrews.		Dr Day.	Professor Connell, and Dr F. Heddle.		

SUMMER

	Practical Anatomy and Demonstrations.	Comparative Anatomy.	Histology.	Practical Chemistry.	Midwifery.
University of Edinburgh.	Professor Goodsir.	Professor Goodsir.	Dr Bennett.	Dr Playfair.	
Surgeons' Hall, Edinburgh.	Dr John Struthers.	Dr John Struthers.	Dr Sanders.	Dr Macadam. Dr Murray Thomson.	Dr Keiller.† Dr Duncan.†
University of Glasgow.	Dr A. Thomson.	Dr A. Thomson.		Dr T. Anderson.	
Anderson's Uni., Glasgow.	Dr George Buchanan.			Dr Penny.	Dr Paterson.
University of Aberdeen.	Professor Lizars.	Professor Lizars.		Dr Fyfe. Mr Brazier.	

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* This course is equivalent to that given under the name of general anatomy and physiology in the should always be inquired for.

† These are not conjoint courses, but separate ones by the gentlemen named.

For additional Summer Courses on special subjects see the Prospectus of each School.

OF SCOTLAND, 1860–61.

SESSION.

Surgery.	Midwifery.	Natural Philosophy.	Natural History.	General Pathology.	Clinical Medicine.	Clinical Surgery.
Prof. Miller.	Dr Simpson.	Professor Tait.	Professor Allman.	Dr Henderson.	Drs Bennett and Laycock.	Professor Syme.
Mr Spence.† Dr Watson.† Mr Edwards†	In Summer.	Mr Lees.		Dr Haldane.	Drs Keiller, Gairdner, & W. Begbie.‡	Mr Spence.
Mr Lister.	Dr Pagan.	Prof. W. Thomson.	Dr Rogers.		Dr Bell, and Dr Ritchie.	Dr A. Buchanan and Dr Lyon.
Dr Hunter.	Dr Paterson.	Dr Taylor.				
Prof. Pirrie.	Dr Dyce.	Professor Thomson.	Professor Nicol.		Dr Kilgour.	Dr Keith.
		Professor Fischer.				

SESSION.

Botany.	Medical Jurisprudence.	Natural Philosophy.	Natural History.	Clinical Medicine.	Clinical Surgery.
Dr Balfour.	Dr Traill. ‖		Professor Allman.	Drs Bennett and Laycock.‡	Prof. Syme.
Mr Bayldon.	Dr Littlejohn. ‖	Mr Lees.		Drs Keiller, Gairdner, and Begbie.‡	Mr Spence.
Dr W. Arnott.	Dr Rainy. ‖			Dr Fraser and Dr R. Scott Orr.	Dr Morton and Dr G. Buchanan.
Dr Bell.	Dr Cowan.				
Dr Dickie.	Dr Ogston.	Professor Thomson.		} Dr Kilgour.	{ Dr Keith.

English Schools. Special schedules are issued by the London Boards for their Scotch students, which

‡ This is a joint course.

‖ Dr Rainy delivers his course only in winter. Drs Traill and Littlejohn give courses during both the winter and summer sessions.

COURSE OF STUDY REQUIRED BY THE VARIOUS BOARDS OF THE UNITED KINGDOM.

	Age.	Anatomy.	Dissections.	Chemistry.	Practical Chemistry.	Materia Medica.	Physiology, or Institutes of Medicine.	Surgery.	Practice of Physic.	Midwifery.	Medical Jurisprudence.	Pathology, or Morbid Anatomy.	Botany.	Natural History.	Practical Pharmacy.	Surgical Hospital.	Clinical Surgery.	Medical Hospital.	Clinical Medicine.	Practical Midwifery.	Vaccination.
	Years.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	Mons.	
Edinburgh University, M.D.	21	6	6	6	3	6	6	6	6	6	3	6	3	3	3	24	6	24	6	6 cas.	
University of Glasgow,	21	6	6	6	3	6	6	6	6	6	3		3			24	24	24	24	3 mo., or 6 cases.	
University of Aberdeen,	21	12	6	6	3	6	6	6	6	6	3		3		3	24	6	24	6		
University of St Andrews,	22	12	12	6	3	3	6	6	6	3	3		3	3		24	6	24	6		
London University, M.B.,	21	6	15	6	1 crs	1 crs	6	6	6	1 crs	1 crs				1 crs.	24	24	24	1 crs	6 cas.	
„ „ M.D.,	23																	24			
University of Durham, M.B. & M.D.,																					
Dublin University, M.B.,		6		6	3 ms	6	6	6	6	6	3		3			9	9	18	9		
„ „ Surgical Diploma,		18	18	6	3	6	18	18	6	6	3		3			27	27	27	27		
The Queen's Univer. of Ireland,		12	12	6	3	6	12	6	6	6	3		3	6	3 mos.	24	18	24	18	3 mo.	
Royal Col. of Physicians, Edinburgh,	21	6	6	6	3	1 crs	6	6	6	3	3	3	3		3	24	3	24	6	6 cas.	
Royal Col. of Physicians, London,																					
King & Queen's Col. of Phys., Ireland,		6	12	6	3	6	6	6	6	6	3		3					27	27	6 mo.	
Royal Col. of Surgeons, Edinburgh,	21	12	12	6	3	1 crs	6	6 or 12	6	3	3	3	3		6	24	6 or 12	24	6	6 cas.	Cert.
Faculty of Phys. and Sur., Glasgow,	21	12	12	6	3	1 crs	6	6 or 12	6	3	3		3		6	24	6 or 12	24	6	6 cas.	
For Double Qualification by Royal Col. of Phys. and Surg. of Edinr.	21	12	12	6	3	1 crs	6	6 or 12	6	3	3	3	3		6	24	6 or 12	24	12	6 cas.	Cert.
For Double Qualification by Royal Col. Phys. Ed., and Fac. of Phys. and Surg. of Glasgow,	21	12	12	6	3	1 crs	6	6 or 12	6	3	3	3	3		6	24	6 or 12	24	12	6 cas.	
Royal Col. of Surgeons, London,*	21	12	12	6		3	12*	12	6	3					3	3 win. 2 sum.	27*	1 win. 1 sum.	9*	To be attnd.	Cert.
Royal Col. of Surgeons, Dublin,		18	18	6	3	3	18	18	6	3	3					27	27	27	27		
Apothecaries' Hall, England,	21	12	12	6	3	3	6		6	3	3		3		Appr.			18	18	20 cas.	
„ „ Ireland,	21	6	12	6	3	3	6	6	6	6	3		3		Appr.	18	18	18	18	20 cas.	

Army Medical Department.—Candidates for admission to the Competitive Examination required for the Army Medical Service must possess a Diploma in Surgery, or a License to practise it, from the Royal College of Surgeons of England, Scotland, or Ireland, or from the Faculty of Physicians and Surgeons of Glasgow, or from some other corporate body legally entitled to grant a Diploma in Surgery, or a License to practise it. They must, besides, and in addition to such Diploma or License, possess other legal qualification to practise Medicine in Great Britain or Ireland.

Royal Navy Medical Service.—Candidates must possess such Diplomas or Licenses as would qualify a civilian to practise Medicine and Surgery.

English Poor-Law Board.—Candidates for the appointment of Medical Officer are required to be registered under the Medical Act, and must be legally qualified to practise both Medicine and Surgery, in virtue of Diplomas or Licenses granted by competent legal authority in England, Scotland, or Ireland.

* Students from the Schools of Scotland are admitted to examination at the Royal College of Surgeons of England, if they have followed the course of study required by the regulations of the Royal College of Surgeons of Edinburgh. Students in Scotland, therefore, are not required to attend more than one course of Physiology, six months Clinical Surgery, six months Clinical Medicine, and twenty-four months Hospital.

Information respecting exceptions to these regulations under various circumstances, and other details as to the order in which, according to some Licensing Bodies, the courses should be taken out, etc., must be obtained by consulting the published Charts of the Colleges, etc. Students should apply to the Secretary to each Board which they intend to pass for a detailed copy of its Regulations.

LIST OF HOSPITALS, DISPENSARIES, ETC., IN CONNECTION WITH THE MEDICAL SCHOOLS OF SCOTLAND.

EDINBURGH.

Royal Infirmary, including Lock Hospital. Upwards of 560 beds. Visits daily from 12 till 2 p.m. Physicians—Drs Bennett and Laycock, Professors of Clinical Medicine; Dr Simpson, Clinical Professor for diseases of women; Drs Keiller, W. T. Gairdner, J. W. Begbie, Clinical Lecturers (Dr K. on diseases of women). Extra Physicians—Dr T. G. Weir, Dr Haldane.

Surgeons—Mr Syme, Professor of Clinical Surgery; Mr Spence, Lecturer on Clinical Surgery; Dr Gillespie. Extra Surgeon, Professor Miller. Assistant Surgeons, Drs Struthers and Watson. Consulting Surgeon, Dr Dunsmure; Ophthalmic Surgeon, Mr Walker; Pathologist, Dr Haldane.

Royal Maternity Hospital. 26 beds: 279 in-patients and 380 out-patients annually. Consulting Physicians, Drs Simpson and Moir; Physicians—Drs Thomson, Weir, Keiller. Consulting Surgeon, Dr Zeigler. Ordinary Surgeon, Dr Dunsmure.

Hospital for Sick Children. 20 beds. Consulting Physicians, Professor Christison and Dr C. Wilson. Physicians—Drs Graham Weir, Newbigging, and Matthews Duncan.

Royal Public Dispensary and Vaccine Institution. About 11,000 patients annually. Medical Officers—Drs Spence, Pattison, Struthers, Somerville, Haldane, Gairdner, Wright, Sanders, Husband, Littlejohn, D. Wilson. Physicians-Accoucheurs—Drs Keiller, Matthews Duncan, Wright, Pattison. Superintendent of Vaccination, Dr Husband. Visits daily at 2 p.m. Vaccination on Wednesdays and Saturdays at 12 noon.

New Town Dispensary. 7800 patients annually. Medical Officers—Drs J. Hunter, Foulis, Edwards, Watson, Dycer, Scoresby Jackson. Consulting Surgeon, Dr Maclagan. Physicians-Accoucheurs—Drs Dumbreck, Pagan, Simpson, Weir. Superintendent of Vaccination—Dr J. Hunter. Visits daily at 2 p.m. Vaccination on Tuesdays and Fridays from 12 to 1.

Royal Asylum for the Insane. About 660 patients. Physician, Dr Skae. Lectures and clinical visits in summer.

Eye Infirmary. Surgeons—Benjamin Bell, Esq., F.R.C.S., and Dr Watson, F.R.C.S. Consulting Surgeon, Dr Hamilton. Open daily at 1 p.m.

Eye Dispensary. 1150 patients annually. Surgeons—Mr Walker, Dr Wilson. Consulting Surgeon, Dr Duncan. Open Monday, Wednesday, and Friday, at 1 p.m.

Ear Dispensary. Dr Jackson. Mondays and Fridays, 11 to 12.

Ear Dispensary, Lawnmarket. Dr T. Keith. Tuesdays at 12. Average, about 20 cases.

Dental Dispensary. Consulting Surgeons—Professor Goodsir, Mr Spence, F.R.C.S. Consulting Dentist, Mr Nasmyth, F.R.C.S. Surgeon Dentists—Mr

Imlack, F.R.C.S., Dr John Smith, Dr Orphoot. Mondays, Wednesdays, and Fridays, 9 to 10 A.M.

GLASGOW.

ROYAL INFIRMARY. 600 beds. Visits daily at 8.30 A.M. Physicians—Drs O. Bell, C. Ritchie, Fraser, and Orr. Dispensary Physicians, Drs Cowan and Steven.

Surgeons—Drs A. Buchanan, W. Lyon, J. Morton, G. Buchanan. Dispensary Surgeons, Drs Dewar and M'Leod.

LOCK HOSPITAL. 47 beds. Consulting Medical Officer, Dr Tannahill. Acting—Drs G. H. B. Macleod, Dr Perry.

LYING-IN HOSPITAL AND DISPENSARY. 20 beds: in-patients 369, out-patients 635. Physicians—Drs J. G. Fleming, J. G. Wilson. House Surgeon, Mr G. Gentle.

UNIVERSITY LYING-IN HOSPITAL AND DISPENSARY. 500 patients. Physicians, Drs Pagan and Leishman. Assistant, Mr J. Christie.

WESTERN PUBLIC DISPENSARY. Medical Officers—Drs J. D. Maclaren, J. Gray, Perry, A. Buchanan, junior, and T. M. Anderson. Surgeon Dentist, Mr G. Buchanan.

EYE INFIRMARY. 24 beds: 1600 patients annually. Consulting Surgeon, Dr Rainy. Ordinary Surgeons—Drs W. Mackenzie, Anderson, Brown. Assistant Surgeon, Dr G. Rainy.

ABERDEEN.

ROYAL INFIRMARY. Upwards of 280 beds. Visits daily at 10 A.M. Physicians—Drs Dyce, Kilgour, Lecturer on Clinical Medicine, Nicoll, Williamson.

Surgeons—Dr Laing, Consulting Surgeon, Messrs Keith, Lecturer on Clinical Surgery, Pirrie, Ker. Ophthalmic Surgeon, Dr Cadenhead.

GENERAL DISPENSARY. 5000 patients annually. Medical Officers—Drs Leslie, Galen, Smith, Forsyth, Fraser, Reith. Visit daily at 9.30 A.M. Vaccination every Wednesday at 3 P.M.

LUNATIC ASYLUM. Consulting Physician, Dr Macrobin. Resident Physician, Dr Robert Jamieson.

OPHTHALMIC INSTITUTION. 500 patients. Surgeon, Dr Cadenhead.

INTRODUCTORY ADDRESS,

DELIVERED AT THE EDINBURGH MEDICAL AND SURGICAL SCHOOL, SURGEONS' HALL, AT THE OPENING OF THE SESSION 1859–60. BY DAVID SKAE, M.D., F.R.C.S.

It is somewhere related of the celebrated John Hunter, that on one occasion, when that distinguished anatomist was called upon to deliver the Introductory Lecture at one of the great London schools, on entering the large theatre of the hospital, and beholding himself surrounded by several hundred young men about to commence the study of medicine, preparatory to the great struggle of living in this go-ahead competition world of ours, he was suddenly filled with dismay at the thought of so many young men devoting themselves to the frightful contest of earning a living by means of this divine art of medicine, overrun by competitors for bare life; his benevolent eyes filled with tears, and, forgetting the exordium of his lecture, he lifted up his hands and exclaimed, "God help you, gentlemen! what will become of you all!"

Called upon, unhappily for myself and you, to occupy at this moment a similar position to that great man, I feel myself inclined to address you in very different terms; and with a full prevision of the difficulties and hardships which may beset you in after life, and of the arduous nature of the duties which you are determined to undertake, I cannot hesitate for a moment to congratulate you on your choice of a profession.

I congratulate you, first of all, because you are still *students;* because you have not consigned yourselves to a warehouse, or shut yourselves up in an office, to apply the elements of education which you have acquired to the booking of letters and invoices, and the drawing up of summonses, and deeds, and dispositions, and the calculations connected with pounds, shillings, and pence. You are privileged to be still *students;* and, what is more, students of that blessed Book of Nature, which it is one of the greatest sources of happiness for man to read and study every day of his life.

It has always appeared to me, that one of the most signal advantages the study of medicine has over the study of other professions, is, that it necessitates the study of nearly all the natural sciences. You may prosecute successfully almost any branch of mercantile life,—you may be an accountant, actuary, or banker, an acute and learned lawyer, and even a statesman, or a distinguished theologian,—and yet remain ignorant of the laws which regulate the material universe, or at least of the laws which regulate *living* bodies, and the wonderful mechanism and phenomena of the whole sentient world. It is a great pity that it should be so; it is a great loss to society, and the interests of civilization and religion too, that such studies should not be imperative upon our manufacturers, merchants, lawyers, legislators, and divines; it is a great pity, in the interests of our onward progress, that any of the workers in the progressive movement should be, in any respect, behind the age; and it is a very great loss to themselves—but such is the fact. No doubt there is a certain amount of general knowledge on all these subjects broadcast among the classes I have spoken of: such an amount of knowledge as may be gained from those institutions where popular instruction in science is made an ornamental and attractive appendage, or such a pittance as is afforded by penny periodicals, and tracts for the diffusion of useless knowledge. Still it cannot be questioned that the study of medicine at present affords the only curriculum of education in this country where the systematic study of the natural sciences is made imperative. What sources of enjoyment, of advancement, and of distinction, do these pursuits not afford? Let us rapidly contemplate, in one brief survey, the subjects of your studies, and you will find that there is not one of them which would not afford you an ample sphere of study for a laborious lifetime, with the prospect of substantial returns and distinction, as well as enjoyment in its prosecution.

I shall not dwell upon those preliminary branches of education which our colleges have so properly deemed essential to your education as gentlemen, and as members of a liberal profession. Their advantages are obvious, and the study of them is imperative upon the students of other professions than medicine. They do not offer, therefore, any illustration of the special advantages of the medical curriculum. I cannot pass them, however, without urging upon you for a moment their importance, in reference to your future advancement and progress. If you prosecute the study of medicine as a science, and desire to keep pace with its progress, you will never cease to regret in after life, that you have not acquired and kept up your knowledge of languages, particularly of French and German. If you prosecute any of the branches of medical science as original investigators, you will find that your observations and experiments require familiar acquaintance with mathematics and natural philosophy, and that you can make but very slow progress in any inquiry without them. The value of which these preliminary acquirements may be to you in after life, it is impossible for me to calculate. In a thousand circumstances, and in innumerable ways, they may prove to be of inestimable value. I shall not endeavour to illustrate the subject further than to say, that I am forcibly reminded, by this allusion to it, of a distinguished student of this school, Dr Lord, whose knowledge of mechanics and mechanical philosophy was such, as to enable him to take a very prominent position in the field, on one of those occasions when our troops in India sustained some disastrous repulses. He was not only able to render essential service on the field, in consequence of his varied knowledge, but he actually supplied guns of his own casting to our disabled artillery.

Of those branches of science which may be called *elementary* to the study of medicine, and which are made imperative by the regulations of our Licensing Boards, I may mention three as illustrative of the assertion I have made, that medicine is the only profession where the study of the natural sciences is imperative, and that these studies afford sources of advancement, usefulness, and enjoyment, over and above their direct bearing upon the practice of your profession. These three are chemistry, botany, and natural history. The knowledge of these subjects which you are required and enabled to attain is something very different from anything you can learn from a few popular lectures, or a course of reading of popular treatises: it is such as will enable you to explain not only the "chemistry of common things," or the botany of your flower-garden, and to know the difference between fishes and mammals; but, if earnestly and honestly studied, it is such as will fit you for pursuing investigations and making discoveries of the highest interest to science and humanity. Wherever your lot may be cast, these studies may prove of invaluable importance to you and others, or may be the solace of your leisure hours, when every other source of enjoyment is cut off. It would be impossible to enumerate all the possible circumstances in which your knowledge of these sciences may subserve your wants or desires. They may be the means, in some distant and inhospitable shore, of enabling you, when you might otherwise perish, to provide the means of life for yourselves and others. They will instruct you in the interpretation of the phenomena of nature, and give an interest to every form of vegetable and animal life. You may pursue them with delight amidst the arduous duties of a remote country practice, and daily find on every hill-side, in each secluded glen, or on the rocky sea-shore, some new object of beauty or wonder to contemplate and enjoy. There is no spot of earth—not the most desolate island in the sea, or the most lonely shore of the arctic regions—where, gifted with a love for these sciences, you will not find scope for your inquiries, and rewards to alleviate the greatest hardships of your lot.

Having said this much, in a very summary manner, of the preliminary branches of your education, what shall I say of the special objects of your studies—of anatomy and physiology?—the study of our own structure—of the wondrous mechanism by means of which we live, move, and think? A great poet has said, "The proper study of mankind is man." He said this in a restricted sense, referring to the study of man as a social being and moral agent. Doubtless the study of man in these relations, and particularly in reference to his future and eternal destinies, is the highest and noblest of all pursuits. I will not presume to claim for medicine more than the second place in dignity and importance; but I am sure I shall be excused for saying that our friends and instructors in the highest sphere of knowledge would understand and appreciate Divine science all the more, and teach it all the better, if they knew more of the laws which govern life, and health, and soundness of mind; and of the wondrous evidences of skill, and power, and goodness displayed in the anatomy of living bodies, and the phenomena of life. But the study of man which is forced upon you as physicians, comprises not a little also of that knowledge of his relations as a social, moral, and immortal being. You will require a large amount of what is called "knowledge of human nature" to make you efficient and successful physicians. You will require much of this knowledge to aid you in the diagnosis of disease, especially in discovering and removing its moral causes. You will require it, too, to enable you to bring moral agencies, which are among our most potent therapeutic agents, to aid in the cure of disease. You may require it, too, to enable you to offer advice in those many delicate and difficult questions in which the friendly physician is made the confidant and father confessor of his patient. And, above all, you may require it when your patient has suddenly to face the last enemy, with no other friendly aid or spiritual instructor but you on whom to lean, as he takes his final step into the unseen world. In fact, your province trenches very closely upon that of the lineal descendants of the apostles; and a large share of the functions of those who healed the sick, and cured all manner of diseases, and went about continually doing good, has devolved upon the physician. You cannot, therefore, enter upon the study of your profession with too high an estimate of the serious and sacred duties it involves. But I am speaking now chiefly of the interest which attaches to the sciences connected with it. And what can possibly afford matter of more interest than the examination of the structure of our own frames? Man is certainly the masterpiece of creation, as he is the lord of this material world. And although the most minute and insignificant of all created things—the humblest animalcule, that can be seen only by aid of the most powerful microscope—is perfect in all its parts, and as complete, in relation to its functions and the little world in which it lives, as man himself; yet, as far as the relations of man, as a social, thinking, and immortal being, transcend in extent and importance those of the animalcule, so far does the study of his anatomy transcend theirs in interest, dignity, and importance. He is "the beauty of the world, and the paragon of animals."

In the study of anatomy you have submitted to you all the mysterious structure by which life is carried on,—the means by which a living, sentient body is developed out of matter,—the marvellous mechanism and curious chemistry by which food is converted into blood, and blood into flesh and bone. Then you have to learn how we inspire life from the air around us, and how the living fluid is conveyed in ceaseless currents through every portion of our bodies. We have to contemplate the wonderful arrangements by which we feel, see, and hear; how we receive, as it were by telegraph, sensations from each portion of our body, and transmit, with equal speed, our volitions to every organ of the will, so as to perform all those movements which subserve every purpose of our lives, and every desire of our minds. Wonderful, indeed, is the anatomy of man, as a mere living, moving, and sentient being: but what evidences of a far anticipating, creative intelligence shall we not trace in the adaptation of man's structure, not only to the mere arts of life, but to the triumphs of art and the discoveries of science! His organs are not, like those of the lower animals, the mere instruments of obtaining daily food, and the means of attack and defence against his natural foes. In them the uses of these various organs cease when they have subserved the immediate purposes of living: their wool, hair, feathers or scaly hides, their bills and mandibles, teeth, nails, claws, hoofs, and horns, defend them from their enemies, and assist in supplying them with food. But with man it is otherwise; he alone, of all animals, is turned into the world naked and defenceless; he has to defend himself from the heat and cold by his own ingenuity; to clothe himself, to construct houses, and invent weapons for the provision of his daily food or the destruction of his foes. He has to *cook* his food when caught, to cultivate the soil, and to do all those things which distinguish even the savage from the beast. But he has to do a great deal more: his anatomy is devised and constructed with a view to his advancement as a social, civilized, and intellectual being, so as to enable him to do all those things which distinguish *civilized* man from the savage. His eye enables him to appreciate every shade of colour and every form of beauty; and by his skill, his hands have constructed for him instruments which enable that eye to distinguish alike the most remote planets and the most minute and invisible things of creation. His ear is not only adapted for mere *hearing*, but for harmony and the *science* of music; and by his hands he constructs the most complicated instruments, and performs upon them the most intricate and elaborate combinations of sweet sounds. His voice is not a mere cry, or instrument of communication between him and his fellows; it expresses his emotions, his highest hopes, and his most abstruse thoughts, and it is in itself one of the most wonderful of all musical instruments. His hands are so wonderfully constructed that they are the instruments of speech and expression, and enable him to make whatever his ingenuity and intelligence can design. They have enabled him, in fact, to make, and were, no doubt, constructed for the purpose of enabling him to make, all those objects of beauty and of mechanical skill which distinguish modern civilized man. In fine, to return to the proposition with which I set out, you have in the study of *human anatomy* the contemplation not only of that mechanism by which we live, move, and have our being, but of that also by means of which all those monuments of human skill and ingenuity which distinguish civilized life have been accomplished. It appears to me that this view of the subject presents somewhat of the same kind of evidence of a prescient and far-seeing Providence, as is afforded by geology, when it is pointed out to us that during unnumbered ages vast fields of vegetable matter have been growing, and decaying, and depositing their remains on the soil, to be afterwards submerged into the bowels of the earth, and there, during many succeeding ages long anterior to the birth of man, to be converted into vast coal fields, in order that they might be prepared for the coming denizen of the earth, and enable him to cook, to forge, to construct steam-engines, with all their machinery, for weaving or travelling, and a hundred other purposes; the same evidence of a prescient intelligence which is afforded by the earth's gradual development for man's subsequent habitation and future wants, is afforded by the construction of his frame for the accomplishment of all those works of art and science which now distinguish civilized life. Such is the mechanism which is the principal and special object of your studies,—of which it was truly said by Galen, that a work on anatomy is the noblest hymn which man can chant in honour of his Creator.

But anatomy is not only a subject of the highest possible interest, it is the basis of all your practical knowledge. Physiology is but the interpretation of anatomy, the science of life, the knowledge of the laws which regulate the movements and functions of this wondrous mechanism. Upon your knowledge of anatomy will depend your skill as surgeons; upon your acquaintance with the laws of living bodies, your readiness in distinguishing disease and its causes, and your ability to remove or prevent the ailments of life.

This brings me to speak of the *duties* of your profession,—a matter of more serious and practical importance than the pleasures and interest of it as a study. The great and immediate object of the art of medicine is the cure, alleviation, and prevention of disease. You cannot too seriously, upon this the threshold of your studies, reflect on the onerous nature of the duties you undertake, and of the responsibilities which will devolve upon you as members of this honourable profession. You are about to acquaint yourselves with all those facts and principles which shall enable you to take charge of the lives of your fellow-creatures. In whatever position you may be placed in after life, whether in general practice, in charge of an hospital, or of troops at home or abroad, your responsibilities are the same. A certain number of your fellow-creatures have placed themselves, or are placed by others, under your care, in the belief that you are fully qualified to afford them all the aids of surgical and medical art, to avert or cure disease, or to save them from death under those sudden dangers to which all are exposed by accident or disease. You accept of this task on the tacit understanding—not the less solemn on that account—that you are efficient for all the duties. Woe be to you, if in the hour of peril you are found wanting, and if those who have trusted their lives in your hands should perish through your ignorance or want of skill! I know of no considerations that will avail, in such an event, to alleviate your remorse, nor will any one pity your sufferings or deplore your fate. I am assured at least of this, that in such circumstances you will find no relief from a conviction that you were inefficiently taught for the emergencies you had to encounter. I feel confident that in the Edinburgh Medical School your opportunities for arming yourselves thoroughly for all the onerous duties of your profession are ample and complete. Here, at least, many of the best surgeons and physicians the world has seen, have acquired the elements of all their future greatness. I speak with some degree of freedom on this subject as a lecturer, because my prelections are not a necessary part of your curriculum, and I feel myself occupying, in a measure at least, an impartial position. Whether I am, therefore, free from prejudice or not, take my opinion for what it is worth,—I believe in no medical school in Europe will you obtain a sounder and more complete medical education. In some schools, both at home and abroad, you may find more scope for the prosecution of special studies, or you may even have more celebrated teachers of certain branches; but in none that I know of will you obtain a more sound, orthodox, and complete practical preparation for the conscientious discharge of your professional duties. It would be invidious in me to mention names, or to enter into a comparison of details, but I cannot refrain from speaking of our hospital teaching. I believe, in reference to the extent of our hospital, and leaving out of view hospitals for special diseases, there is no institution of the kind in Europe where clinical instruction is conducted in a more useful, practical, and efficient manner.

In referring to the hospital, I feel that I would be wanting in my duty to you in this introductory discourse, if I were not to urge upon you strongly the vital importance of hospital study. You cannot be too much in the hospital. It is there you will learn to recognise disease,—to be familiar with all the appliances of medical and surgical art,—to be at home and self-reliant in the practical discharge of your duties. It is in the field alone you will learn to be botanists,—in the laboratory alone, that you can ever become chemists,—in the dissecting room, anatomists. All the lectures you may listen to on these subjects are but agreeable airs upon a given theme, unless they are illustrated and impressed upon your memories, by the eye as well as by the ear, by careful observation and actual work. So it is with your duties as surgeons and physicians,—the best lectures will be lost upon you, unless followed up by diligent and patient study in our hospitals. No description of disease, however eloquent and graphic, can supply the place of what you have actually seen and examined. It is in the hospital alone that you can acquire facility in recognising disease—readiness, and tact, and self-possession in the treatment of it, especially in cases of emergency and danger. The hospital is the true field for the study of *disease* and the effects of *remedies*. It is there alone you are enabled to distinguish between the efforts of nature and the effects of medicine—to learn how much the former can do, and how little the latter can effect, in the cure of disease. It is there alone you learn the natural history of diseases. In private practice you see one disease only at a time, or a few cases at one time and a few at another; and you are very apt to attribute to your medicines what is due to nature—to make the common mistake in medicine, of confounding the *post hoc* with the *propter hoc*. In private practice, too, you are very likely to have the effects of your medicine interfered with by other causes over which you have no control. Sometimes your medicines are not taken—more frequently their influence is counteracted by other agencies—high living, the use of stimulants, exposure, toil, and anxiety—and the effects of treatment are rendered uncertain or abortive. In the hospital it is very different. There your patient is removed from all extraneous and disturbing elements. You can regulate his diet and mode of life—you can trace the natural course of his malady, and can thus only truly learn what *nature* can do and what *art* can do.

With a view to your deriving the full amount of the benefits I ascribe to hospital study, I advise all of you who can, to take out a perpetual ticket to the Royal Infirmary at once. It is both the cheapest arrangement and the best, for it will enable you, during the whole period of your studies, to be picking up practical knowledge, and to have the subjects of the lectures you attend illustrated by the things themselves, which, being seen and observed under the immediate interest attached to them, and the light diffused over them by the lectures to which you have been listening, will be indelibly impressed upon your memories.

And here let me offer you a few advices as to your hospital studies. In the first place, I think it must be confessed that too much interest is attached, by students in general, to the great events of hospital practice, and too little to the smaller events and minor ailments and operations which are daily to be witnessed. You crowd with eagerness to see a limb lopped off, an upper-jaw excised, or a stone removed from the bladder; while in all probability you may never be called upon to perform any of these operations during your lifetime. On the other hand, how few care to see a fractured limb put up, or a dislocation reduced—how few care to learn how to bandage a leg or pass a catheter adroitly, or draw a tooth with dexterity, or dress an ordinary wound. How few take the trouble to learn how to distinguish one skin disease from another, or one disease of the eye from another. Medicine has its dramatic interest with students as well as surgery; and what are called *fine cases* of pneumonia, or heart disease, or aneurism, or cancer, attract far more attention than minor or more common ailments. (To those who, by their position in the hospital, are obliged to attend to these minor matters, these remarks do not apply; and I have no doubt the clerks and dressers of the Royal Infirmary all learn to do their work efficiently and dexterously, even to the most trivial operation; but of the great mass of those attending the hospital wards, I think it is too true that they attach undue importance to those events which have some degree of tragic interest about them.) Now, with a view to your future interests, this is a great mistake. To judge from the relative attention paid to these several subjects, one would imagine you were about to operate for hernia at least once a-week, and cut for stone every day of your lives. Now, I am pretty confident, in reference to the latter operation especially, which excites so much interest, I could count upon my fingers all the surgeons in Scotland, now alive, who have ever performed it. I am far from disparaging the importance, and indeed the necessity, of your knowing every duty that may devolve upon you in after life, but I wish to impress upon you the importance of not overlooking the small and common duties, instead of concentrating your interest upon the great but rarer duties required of you. You may pass many years of a laborious lifetime in the daily practice of your profession, and may never be called upon to perform any of the capital operations of surgery, in which you take so much interest; and even when they do fall to your lot, perhaps you will find it more advisable *then* (whatever your heroism would lead you to do *now*) to devolve their performance upon some one who has been able, by peculiar and favourable circumstances, to devote himself to that special department. When you enter upon the practice of your profession, you will find that much of your comfort and success will depend upon your readiness to recognise and relieve the lesser ills of life, and your dexterity in performing little and common operations. I could give you many illustrations of the truth of these remarks. I have known young men of rare talents and high promise, distinguished by honours, and by their speeches and papers as students, who, upon their outset in life, encountered most distressing reverses and much shame by finding themselves unprepared for the most ordinary duties of practice. I remember a dear friend of my own who commenced practice with a very fair reputation, but who was soon afterwards called upon suddenly to set a broken tibia for a gentleman who had slipped on a street slide and broken his leg. From want of skill and practice, he set the leg so badly that the gentleman recovered with one limb an inch or two shorter than the other, to go about a living daily monument of my friend's ignorance, for which the gentleman not only abused him lavishly, but refused to pay him a farthing for his attendance.

A late esteemed and distinguished physiologist and professor of medicine used to tell, with a ludicrous mixture of humour and shame, of the mishaps attendant upon his first case of midwifery. He had gone to visit his native village, flushed with honours and the first fruits of his dawning reputation. This proved his misfortune; for the village doctor, having a difficult and protracted case of labour under his care, gladly called in the professor, to avail himself of his superior advice and skill. Now, it happened that the professor had never seen a case of midwifery in his life; but, unwilling to ruin his reputation among his own countrymen by confessing ignorance of the most common duties of a doctor, he went to the consultation, trusting that the practical experience of the village surgeon would screen him from any gross exposure. On putting a few leading questions, accordingly, for his own guidance, to his brother practitioner, as to the nature of the case, he was told that it was a child with a very large hydrocephalic head, that could not possibly get into the world without an operation; and he was asked to satisfy himself that such was the case, so that he might give his sanction to the necessary operation. The professor accordingly made an examination; and, finding nothing that he could comprehend, he thought his wisest course was to agree with his more experienced brother, and he accordingly pronounced it *all right*, and operative proceedings were commenced. An ugly instrument, called a crotchet, was introduced, for the purpose of pulling out the large-headed child, dead or alive; and after pulling away for some time, a fortunate effort of nature expelled the poor child into the world, breech foremost, there being nothing wrong with the poor creature at all, except that it came into the world with the wrong end first, and had thereby nearly been emasculated by having its scrotum dreadfully torn by the crotchet. Our physiological friend never attended another case of midwifery.

On the other hand, I could tell you how in many cases a little dexterity and adroitness in the simpler duties of practice has been the first step towards prosperity. It was, it is said, the administration of a very agreeable and efficient draught to a lady of rank, that proved the first step on the ladder of fortune to the well-known Jephson of Leamington, then a village apothecary. One of the most distinguished physicians now in practice owed his first good patient—*i.e.*, his first patient among the upper ten thousand—to his dexterity in little matters, a dexterity acquired in one of our hospitals. A lady was in labour, and attended by an old and respectable practitioner, when, through one of those circumstances which not unfrequently occur, it became necessary to empty the bladder by means of a catheter. This her medical attendant in vain attempted to accomplish in the usual way (that is, under the *bed-clothes*), and at last he stated that it would be necessary for him to use his eyes. Against this proposal the lady protested. She said she would die first! The family surgeon was sent for in this extremity, who, after hearing how the matter stood, and not being himself an *expert* in obstetrical matters, said, Send for young Dr ———, he will manage it. This young aspirant after fame was instantly despatched for, and in a trice he solved the difficulty *in the dark*, and with so much dexterity as to acquire the confidence and patronage of the family from that day.

I mention these incidents in order to impress upon you the importance of studying all the minutiæ of your profession,—of doing so actively and practically,—of not being content with knowing you *understand* a thing, but resting content with nothing short of having seen it or done it, and having seen and done everything about it so often as to have perfect self-reliance regarding it. In this manner only will you be able to undertake the duties of your onerous profession with confidence, and in this way you will be able to discharge them in such a way as cannot fail sooner or later to bring you a due reward.

I have another advice to offer to you in reference to your hospital studies, and that is, to learn one thing at a time, and to do it thoroughly. You will find yourself wofully mistaken at the end of your curriculum, if you imagine that, by simply listening to lectures, and taking notes, and wandering about the wards of an hospital, looking at everything, you are insensibly imbibing a knowledge of everything. You must systematise your studies. If you want to learn *surgery*, give your whole mind to it,—*see*, and learn, and *practise* everything about it: learn how to bleed, and open an abscess, and bandage, and operate, by *doing* all these things as far as you can possibly find opportunities of doing so. Examine every case for yourselves, and read up the subject at the same time, and *dissect* with reference to it. If possible, take your subjects in *detail;* and if there is an opportunity, make them matters of special study wherever they can be studied as *specialties.* If there are wards for skin diseases, work up that subject by itself,—read up skin diseases, and see as many cases as you can by possibility see, till you can distinguish one skin disease from another. It is not every medical man who can do that—indeed, very few can; and if *you* learn to do it, you will find it a matter of very great importance to you in after life.

Diseases of the eye you may study as a specialty; and if you do, you will be astonished at the amount of knowledge you will very easily acquire, which is very little known to the great mass of medical practitioners who have not made it a special study. A great many doctors, even in large practice, have only a dim notion that diseases of the eye are things requiring merely the use of an eye lotion, or Singleton's golden ointment; and you may see in eye dispensaries many persons who have been under the care of such doctors, and who have lost, or are fast losing their eyesight, and threatened with total blindness and *ruin*, because those first entrusted with their cure did not distinguish between one disease of the eye and another, and did not use the appropriate treatment.

Study medicine in the same way: systematise your studies. Learn diseases of the chest by themselves, and do it thoroughly while you are at it. Practise the use of the stethescope, and examine every case where its aid can avail, until you are expert in its use; and read up at the same time special works on diseases of the heart and lungs.

Study female diseases and midwifery, fevers, and the exanthemata in the same way; make them each in succession the objects of your special study, by reading and by observation in the hospital conjoined—and that even for a short time—and you will never afterwards forget them.

I might extend these observations to other classes of diseases—to diseases of the stomach, of the liver, or of the kidneys, etc.—but I forbear: the same is true of them all. The best way of studying them is to take them in detail, and make each a matter of special observation and study.

I shall, I hope, be pardoned if I take one more illustration from that department of medicine to which I am specially devoted. I refer to *insanity.* The acquisition of all we know regarding the various forms of insanity, and their proper treatment, is a comparatively easy thing, if made for a very short time the subject of special study. Yet, because it is very seldom studied in this way, or indeed studied at all, it is amazing the mistakes which are daily made by medical men in general practice in regard to it,—mistakes as to the nature of the cases, their danger, their curability, the mode of dealing with them, and even the simplest duty—that of signing certificates regarding them so as to obtain their admission into an hospital. It not unfrequently happens that one, two, or three days are spent in getting certificates of insanity *so* filled up that a sheriff's warrant may be obtained for the protection of a lunatic, all the time dangerous to himself and others by being at large. It would be no easy task for me to enumerate the mistakes committed in regard to cases of insanity, and the conflicting nature of medical testimony in many important legal inquiries regarding such cases, which daily occur, and which might easily be obviated by a little special hospital study of this disease. I have heard of officers of the army upon whom medical boards had sat, being discharged from the service for drunkenness, when they laboured only under a form of insanity called general paralysis. It is only a few weeks ago since I observed such a case, in the person of a gentleman on board of one of the steamers going to the Island of Skye, of whom a single glance informed me that he was labouring under a disease of the brain, certain to prove fatal within a few months, but of whom I was told by his servant, that he had been ordered to Skye by the doctors, in the belief that the climate of that island would speedily cure him. I do not mention that case as any illustration of my acuteness, for any intelligent *attendant* who had been for a short time in an asylum would as readily have formed the same opinion. I mention it only as an illustration of the facilities which are acquired by the study of special diseases for their ready recognition, and of the insufficiency of general principles, or lectures, or reading, for supplying what can only be acquired by actual observation and hospital study.

On this subject I venture to add one sentence more. I cannot but regard it as a singular anomaly, that the study of mental diseases has not hitherto received a place in the curriculum of medical education in this country, and that none of the licensing boards have ever required any instruction in this department of medicine on the part of their licentiates. The cure or alleviation of diseases of the *mind* appears so obviously to transcend in importance and interest the treatment of any bodily disorder, that we may well wonder why the study of this subject has been so completely ignored by our colleges and universities. In the course of your studies, you will find that there is scarcely any bodily disease which is not described to you several times, some of them by three or four of your teachers—one describing them anatomically, another surgically, a third physiologically, and a fourth from a medical point of view. You work at the anatomy and surgery of hernia and lithotomy, and grind up the mode of detecting the 1000th part of a grain of arsenic in the liver or kidney, and how to discover nicotine in a person poisoned with tobacco,—all very proper things to know, but they are operations which may not fall to the lot of one medical man out of ten thousand. Yet this disease, which you cannot pass a few weeks in practice without meeting in some of its phases—a malady so common, that one out of every 400 of the population is affected by it; so dreadful as to involve the overthrow of reason, of all that distinguishes man from the brutes; and with this overthrow of reason, to destroy all that renders life desirable, and too often to lead to self-destruction or some fearful homicide—this disease you are not taught to distinguish or to treat. You are neither instructed how to recognise its incipient symptoms, so as to interpose in time to save life, nor how to act in those circumstances of danger which paralyse every one with terror, and fill our daily papers with the most horrible tragedies.

However desirable it may be to avoid overburdening you with too many classes, I cannot but regard the omission of *insanity* as a most serious one in the curriculum of your studies.

Having now, gentlemen, endeavoured to inspire you with some degree of ardour for those engagements upon which you are about to enter, to impress you with a sense of the responsibility of the duties which devolve upon you as medical practitioners, and to offer you a few practical hints on what seems to me the best way of acquiring a sound, practical knowledge of your profession in all its branches, so as to enable you to discharge its duties with credit to yourselves and advantage to others, I have only to wish you every comfort and success in the prosecution of your studies, and to bid you farewell.

Part Second.

REVIEWS.

Third Report of the Commissioners of Her Majesty's Customs on the Customs, 1859. (Medical Report by J. O. M'William, M.D., F.R.S., C.B., R.N., Medical Inspector.)

When we say that the Medical Report which is given as an appendix to this blue-book is by Dr M'William, it is unnecessary to add that it is a very good report, and that it may be safely recommended to the attention of any one among our readers who may take an interest in the Waterguard and Waterside officers of Her Majesty's Customs—a class in which we cannot, for ourselves, acknowledge a very lively interest—or who may be possessed with the idea that much result of any sort, except a very fallacious and unsatisfying one, is to be derived from statistical tables which refer to a body limited in numbers, and which scarcely enter into a description of individual "disturbing causes,"—an idea which, we are free to confess, has, long ago, ceased to have any hold on our own minds. Fortunately for Dr M'William's reputation, he has written reports which are likely to be referred to long after Mr Gladstone will have finally abolished all customs' duties, and finally "compensated" all customs' officers, and which are derived from scenes which possess greater general interest to the medical world, if they cannot be said to be more savoury, than the purlieus of Thames Street.

When this has been said, our duty may, perhaps, be allowed to cease; but it so happens that this Report includes the very hot summer of 1858, when the Thames was more than ever abominable, and the *Times* has lately taken occasion to make it the text for a song of jaunty rejoicing, and for an attempt to scoff at doctrines which have been built on a foundation which not even the greatest amount of "able-editor" power is ever likely to dislodge. We would be sorry to implicate Dr M'William in the charge of putting forward a *fallacia equivocationis*, but it is not easy to acquit him of a certain disingenuousness in stating his case, and of thus supplying an unclean weapon to the enemy's hands. He says:—"While then it is not only admitted, but urged, that miasms and foul emanations, from whatever source arising, call for the immediate employment of every means of prevention or mitigation which science and art can suggest, and that the legislative and other investigations into the condition of the Thames during the last summer, were fully demanded by the occasion; it is nowhere sustained by evidence, that the stench of the river or docks, however noisome, was in any way productive of disease. On the contrary, there was less disease of that form to which foul emanations are supposed to give rise than usual.

"I am quite assured that had cholera in an epidemic form appeared in London during last summer, the cause and effect relation of the stench of the river, and the advent of that disorder, would have been considered as firmly and triumphantly established, not only by the majority of the public, but also by not a few of the medical profession."

Now, we are not aware that any one who is worth listening to, not even any most devoted acolyte of the defunct Board of Health, has ever said, that "stench from rivers or docks," or any other place, has ever been productive of disease, in the sense of being the sole producing cause. Shakspeare—who, by the way, often adopts expressions from the theories of infectious diseases, and who is always on the side of the "Board of Health doctrine"—makes Henry V. say:—

> "And those that leave their valiant bones in France,
> Dying like men, though buried in your dunghills,
> They shall be fam'd, for there the sun shall greet them,
> And draw their honors reeking up to heaven;
> Leaving their earthly parts to choke your clime,
> *The smell whereof shall breed a plague in France.*"

But this is poetical license, and it behoves us, when writing sanitary reports, to speak prose, and the most prosaic prose. The "stench" of putrefaction is no more than the sensation given to the nose which indicates the presence of putrid particles. It is no more the cause of anything, except an unpleasant sensation, than is the very pleasant odour which meets one on passing Mr Atkinson's shop in Bond Street, which, on the other hand, causes an agreeable sensation.

This by way of parenthesis, however. What the *Times* seems to hint or suggest,—for the *Times* never asserts anything broadly which is not quite safe,—is something like this:—"It is asserted that the presence of putrefaction supplies the conditions necessary for the causation of zymotic diseases, and that a high temperature increases the ratio of the activity of these conditions. In 1858, the Thames was a great open sewer running through most populous districts, and the summer was a very hot one; but there was no zymotic disease among the customs officers. Therefore, putrefaction and zymotic disease in no sense stand in the relation of cause and effect. Therefore, let us consider a cesspool under our dining-room, a leaky water-closet beside our nursery, and house water mixed with sewage, as simply unpleasant, but nothing more, as quite inoperative in the production of disease;" and so on, after the manner of "able-editors." There is only one objection to this, that the premiss is false, assumed without reason. He who would say that animal or vegetable putrefaction gives *all* the conditions necessary for the production of disease, "all the corrupt and venomous air which may kill a man," is likely to be met with numberless instances in disproof of so rash an assertion. He who would endeavour to show what are the conditions, additional to the presence of putrefaction, which are necessary to the result, is likely, in the present state of knowledge, to have a very difficult task. But a great number of persons, whose opinions are worth something, contend that we know enough to be able to say that putrefaction is certainly one of the ascertained conditions which, with another or others not yet demonstrated, form one complete cause, the effect of which is zymotic disease. There is a broad line of difference between the opinions of the contagionists and of the non-contagionists. On the one side, it is maintained that the principle of infection can be produced only during life, and that it ceases at death; on the other, it is asserted that it only begins to be evolved when the chemical changes of decomposition occur after death. If the terms of a life-long discussion can be expressed in one line, these few words perhaps express the two antagonistic theories. Of course, we are not going to discuss them now. If the truism may be pardoned, there is a great deal to be said on both sides. No one should know this better than Dr M'William; because, if we mistake not, he has himself said a great deal on both sides. This is very much to his honour, in so far as it is honourable and creditable to be above fearing a "foolish charge of inconsistency." All that we wish to say is, that any conclusion from Dr M'William's Report, such as the *Times* has attempted to suggest, is an erroneous one. Dr M'William tells us that there was no pestilence in London in 1858, notwithstanding that the Thames was converted into an immense sewer, which was acted on by the high temperature of a very hot summer. But it did not need a prophet to arise in Thames Street to tell us that.

We are only concerned, just at present, about a true statement of opposite doctrines; and to show, as far as a quotation from the most distinguished of their number can show, that the non-contagionists have not asserted what the *Times* assumes to have been asserted, we shall quote a very eloquent passage from Mr Simon, on the subject of the Cholera Poison:—"That which seems to have come to us from the East, is not itself a poison so much as a test and touchstone of poisons. Whatever in its nature it may be, this, at least, we know of its operation. Past millions of *scattered* populations it moves innocuous; through the unpolluted atmosphere of cleanly districts, it migrates silently, without a blow. That which it can kindle into flame is not there. To the foul, damp breath of low-lying cities it comes like a spark to powder. Here is contained that which can swiftly make destruction,—soaked into the soil, stagnant in water, griming the pavement, tainting the air,—the slow rottenness of unremoved excrement, to which the first contact of this foreign ferment brings the occasion of changing into new and more deadly combinations."

A Manual of Human Microscopic Anatomy. By A. KÖLLIKER, Professor of Anatomy and Physiology in the University of Würzburg. With 249 Illustrations. London, 1860.

WHEN we consider that the systematic study of Minute Anatomy was begun only about twenty years ago, we cannot fail to be surprised at the rapid progress which it has made, and the degree of perfection to which it has attained. There is nowhere any better example of the influence of a leading idea or principle on the advancement of a science. The use of the microscope, as an instrument of research, had been adopted by anatomists two centuries before, and the discoveries of Malpighi and Leeuwenhoek had shown what might be accomplished by means of it. But, partly owing to the imperfections of the instruments employed, and still more to the want of any definite aim on the part of inquirers, observations were few, isolated, and often erroneous; and the method of investigation had fallen into discredit. No sooner had Schwann, availing himself of the admirable researches of his contemporaries, discovered the principle of the identity of origin of all tissues from nucleated cells, than a common starting-point and rule for all future inquirers was gained, and the science of Microscopic Anatomy sprang, Minerva-like, fully equipped from the brain of its discoverer.

The importance which Minute Anatomy has now assumed is amply demonstrated by the large volume before us, and it cannot now be necessary, as it was once, to defend the science from objections, or to point out the advantages which have arisen from its pursuit. The study, no doubt, presents certain difficulties, which the admirable simplicity of the general principle—the cell theory, which co-ordinates and explains all the details—compensates for, but does not entirely prevent. Then, again, it requires much time for its pursuit; and, being to many an engaging occupation, it is apt to distract enthusiastic observers from more practical pursuits: an objection which, we fear, applies to all sciences yet discovered. But the truth is, that Microscopical Anatomy is already *un fait accompli:* it has taken a fixed and prominent position among the medical sciences, and perhaps none of them at the present time exerts a more extensive or more powerful influence than it does on the progress of scientific medicine. It has thrown an entirely new light on the most difficult problems of anatomy; it has opened up new regions in the domain of comparative anatomy; modern physiology is to a large extent founded upon it (for the cell theory was a physiological as well as an anatomical discovery); and pathology has been remodelled, and owes its latest advances to cellular histology. Further, there seems every reason to expect that the attempts which are now being made to found a scientific system of therapeutics in accordance with the minute histological structure of the body, will infuse new vigour into that neglected but most useful branch of medicine, and may render Minute Anatomy more directly serviceable than it has yet been, by turning to a practical relation the labours which have hitherto been almost purely scientific. There can be no question, therefore, that the cell theory of Schwann, and Microscopical Anatomy, which has been the development of that theory, have given an immense impulse to medical science, and have enriched medicine not only by the discovery of new truths, but by the introduction of new methods of investigation, some of the highest results of which yet remain to be attained.

The Manual of Professor Kölliker contains a full and systematic exposition of the minute structure of the human body, so far as that is at present known. The volume commences by a short account of general histology, in which the structural elements and simple tissues are described, including especially the history of cells, their origin, transformation, functions, and the modes by which the tissues are developed from them. But although very important, this part of the subject, being restricted to human histology, is necessarily brief. The second division of the work, which is devoted to special histology, or the study of the complex tissues and organs of the body, forms by far the largest and most valuable portion of the volume. The descriptions here given are most elaborate and precise, and embrace an immense amount and variety of details, all of them accurately ascertained, many of them the results of laborious original investigation, interspersed with criticisms and remarks on the relation of the facts observed to physiology and pathology, of a highly interesting and suggestive character. All the different tissues and organs are treated of with the same care and completeness, and the means employed for their examination explained. It is well known that for the authorship of such a treatise, Professor Kölliker possesses qualifications of the highest order. For many years past, no one has contributed so largely as he has done by his discoveries to the advancement of Minute Anatomy; and, since the excellent work of Henle on General Anatomy has fallen out of date, Kölliker is the histologist who, above all others, has been able successfully to supply its place. It will be remembered that the Sydenham Society, in 1853, issued an English translation of Kölliker's Manual, under the able editorship of Professor Huxley and Mr Busk, which proved at that time of great service to the histologists of this country, more especially by acquainting them with the most recent discoveries in Germany. Original English treatises on histology, of great merit and excellence, were indeed not wanting, but they were either affixed to or dispersed through larger text-books on anatomy or physiology. We need only instance the graphic and original descriptions of minute structure in Todd and Bowman's Physiological Anatomy, and in Professor Sharpey's introduction to Quain's Anatomy, and in our physiological manuals.

But the rapid advances which were made in a subject comparatively new, as well as the increased number of investigators at work in this country, created a necessity for a treatise specially restricted to histology, and embodying the most recent information on the subject. Such a want Professor Kölliker's Manual supplied; and the issue of another translation at the present date, by an independent publisher, seems to prove that the cultivation of Minute Anatomy has extended beyond the limited number which the Sydenham Society could reach. We are glad to observe this sign of progress; and we wish the new volume all the success which it deserves. As a special systematic treatise on human textural anatomy, the Manual of Professor Kölliker indeed deserves high commendation, and is worthy of the great reputation of the author. And more especially as a work of reference, either to the student or professed histologist, it is invaluable, affording the fullest and most authentic, as well as the most recent, information on every subject; and presenting a record, faithful and complete, of the state of Human Microscopical Anatomy at the present time.

Our limits would not admit even of a very general and cursory survey of a science so extensive as histology; and into the details of description, modified and corrected as they are in many essential particulars by the results of new discovery, it would be out of place to enter here at requisite length. We shall only allude, therefore, to some few points, which those interested in the subject will find deserving of attention.

It is worthy of remark, that in one particular the views of cell formation have recently undergone material modification. Formerly, in common with most histologists, Professor Kölliker maintained the original doctrine of Schwann, that cells may originate in two ways: either by generation from cells previously existing, or by free formation in a fluid without the intervention of any antecedent cells. The latter mode of origin has been a subject of much discussion among physiologists of late years; and, from its bearings on pathology, much importance has been attached to it. Virchow was, we believe, the first who, in regard to animal histology, undertook, by a long array of facts and arguments, to refute the notion of free cell formation altogether. This distinguished pathologist maintained that there was no other principle for the production of cells except their generation from pre-existing ones in a continuous series. He looks upon free cell formation as equally anomalous with the supposed spontaneous or equivocal generation of animals, and, like it, deserving of rejection, as not only unphilosophical, but untrue. Every cell and every animal he affirms to be the offspring of a parent cell or parent animal; *Omnis cellula é cellulâ* is the counterpart of *Omne vivum ex ovo;* the law of continuous development is applicable, without exception, to the simplest and most minute, as well as to the largest and most complex organisms. Kölliker, although participating to some extent in these views, was, till very recently, inclined to admit the occurrence of free cell formation in a few instances; but, in the present edition, he has entirely renounced that opinion, and is now quite decided in restricting the origin of cells to their production from pre-existing ones. This constitutes a great progress, which, we trust, future observations will confirm. The whole subject of cell-genesis is greatly simplified by it, and put upon a more philosophical footing. Moreover, there is a special interest arising from the circumstance that upon this law of continuous cell development Virchow has based his celebrated system of cellular pathology, in which he professes to have traced morbid structures back to the normal elements of the tissues in which they have arisen, and to have demonstrated a more intimate connection than had ever been anticipated between the processes of health and disease.

In regard to another important subject, the views of Kölliker have also come into closer correspondence with those of Virchow. We allude to the structural relations of the tissues grouped together as the connective tissue series, which includes fibrous tissue, cartilage, and bone. It has always been admitted that these tissues are closely allied, not only by their common function of forming passive organs of connection or support, but also in a more remarkable manner by their frequent conversion one into the other, as in normal ossification, morbid formations of bone, the fibrous cicatrices of wounds in cartilage, union of fractured bones, etc. But their distinctive characters were so decided, that anatomists were unable to trace any exact correspondence in their structure by which their intimate connection might be explained. It is again to the researches of Virchow and Donders, and the philosophical expositions of the former, that we owe the discovery of the essential similarity of these textures, by tracing the homology of their constituent parts. Every member of the group, in fact, consists of the same elements, which, although variously modified, are distinctly recognisable. These elements are, 1st, cells; and, 2d, an intercellular substance or matrix, which is solid, usually in large quantity, and encloses the cells, which are distributed through it in a more or less regular arrangement. Of course, the cells in the one tissue are homologous with the cells in the others, and the matrix of each corresponds in like manner. The modifications which these elements undergo, in order to constitute the different members of the series, are sufficiently plain. In cartilage, which presents the simplest form, the cells preserve their rounded shape, and are imbedded, at short and regular distances, in a matrix, which is solid, but quite hyaline and structureless. In fibrous tissue the elements are curiously changed; the cells, or "connective tissue corpuscles," are elongated and branched, and frequently anastomose together in a network of fibres, which are insoluble in acetic acid, and are known as the elastic or so-called "nuclear fibres;" while the intercellular substance, or matrix, is split up into fibres, which, however, are soluble in acetic acid, which renders the intercellular substance quite homogeneous, like that of cartilage. In osseous tissue, on the other hand, the matrix, or intercellular substance, is solidified by the deposit of calcareous salts; while the cells, elongated, and presenting an immense number of minute branches, remain uncalcified. These soft cells and their offsets fill up the lacunæ and canaliculi, and the calcified matrix forms the hard substance of the bone. The cells of cartilage, therefore, are homologous with the connective tissue cells and elastic fibres of fibrous tissue, and with the lacunar cells of bone; and the hyaline matrix of cartilage corresponds with the soluble fibrous substance of fibrous tissue, and with the calcified material of bone. In regard to osseous tissue, it should be remembered that the lacunæ and canaliculi seen in the dried bone are, during life or in the fresh state, occupied by soft cells and their branches, as Goodsir long ago pointed out; so that, in comparing osseous with cartilaginous or fibrous tissue, the structure of fresh bone must be kept in view, otherwise the correspondence of the lacunar cells with cartilage cells, and of their enclosing hard substance with the tough but uncalcified hyaline matrix of cartilage, would fail to be perceived. From this essential correspondence and homology of their minute structure, it will easily be perceived that the conversion of any one of these tissues into the other may readily be explained. They all, in fact, originate from cells, and a blastema; and there exist gradations of development, which show the transition of one tissue into the other. It is a very interesting fact, that in all of them the cell elements minister to their nutrition, the branching cells apparently conveying a nutritive plasma through their substance. In all pathological changes the cells perform the chief part, and, according to Virchow, are the source for the development of pathological products. It is proper, however, to remark, before dismissing the subject, that Kölliker does not entirely coincide with Virchow in regard to the formation of fibrous tissue, since he still maintains that the white soluble fibres arise from cells, and not from an intercellular substance. There are also other points of difference, on which, however, we need not dwell. We have given Virchow's views, which explain most clearly the general aspect of the question: for Kölliker's more special opinions, we may refer to the Manual now before us.

We must content ourselves with only a general recommendation of the descriptions contained in the special parts of the work, without attempting to notice particularly the various points of interest which they present. It is especially in the accuracy and completeness of these descriptions, that the complete mastery which the author has over his subject appears to greatest advantage. In this edition, as compared with previous ones, will be found new facts, and valuable additions in every section, on the muscles, the glands, the digestive organs, etc. The central organs of the nervous system are perhaps the part of which the treatment is least satisfactory, owing to the extreme difficulty of the investigation, and the present unsettled state both of histological and physiological opinions on the subject. A great deal yet remains to be done to clear up the minute structure of these, undoubtedly the most important organs of the body. In fact, the inquiry may be said only to have begun; but it is at present attracting so much attention as will lead, at no distant date, to very important results, of which we have already obtained the earnest, in the discoveries of Stilling, Vander Kolk, Owsjannikow, Kupfer, Lockhart Clarke, etc. The methods of preparation by chromic acid and carmine, especially as practised by Clarke, afford the prospect of overcoming, to a large extent, the mechanical difficulties of the investigation; and we trust, in future editions, to find the record of the steady progress of science towards the solution of the momentous questions which arise in connection with the minute structure of the ganglia, spinal cord, and brain.

As a contrast to this weak point of histology, we may refer to the chapters on the organs of the senses, where discoveries of great interest have recently been made, in which Kölliker has borne a conspicuous part. The minute structure of the retina, both as regards the various elements, cells, fibres, rods, and cones of which it is composed, and the relation of these to each other, has now been satisfactorily ascertained by the researches of the author and H. Müller, and is most carefully described and delineated. Not less elaborate is the account of that beautiful arrangement of microscopic structures on the spiral lamina of the cochlea, in connection with the termination of the acoustic nerve, which has been the object of so much careful and curious investigation, since Corti drew the attention of anatomists to the subject. In the organ of smell, also, we find the description of the peculiar spindle-shaped bodies, lately discovered, which have been termed olfactory cells, and which appear to form the termination of the nerve of smell in the mucous membrane of the nasal cavity. The mechanism of the organs of sense evidently depends so closely upon the mode of arrangement of the peripheral ends of the nerves, that every new discovery in this direction has a peculiar value in regard to nervous physiology, in addition to its anatomical interest. In this respect, this portion of Professor Kölliker's manual deserves special attention and study. Nowhere else could the English reader find the new and important information which is there recorded.

In concluding this necessarily brief notice of this valuable work, we shall only add, that the translation is, on the whole, ably executed, and that the letterpress and illustrations are excellent.

LETTERS FROM VIENNA.—No. I.

EDITED BY DR MERCER ADAM.

We have much pleasure in announcing to our readers a new feature in the *Edinburgh Medical Journal*, consisting of a series of letters from the Austrian capital, which will be published, every alternate month, in our pages. The increasing interest with which all that relates to the theory and practice of medicine in Germany is now regarded by the profession in this country, as well as the great extent and value of the *materiel* afforded by the Hospitals of Vienna, Berlin, Prague, Würzburg, and elsewhere, have induced the conductors of this journal to make this arrangement for the appearance of original reports on all that is going on in these places. Vienna may fairly be regarded as the medical metropolis of Germany, and as the most important centre of its scientific intelligence. But while the "Letters" will be mainly occupied with the events occurring in the medical microcosm of Vienna, the other schools and hospitals of Germany, the transactions of the various learned societies, and the labours of the distinguished teachers and investigators elsewhere, will not be neglected. The "Letters" are from the pen of a physician of very high standing in Vienna, connected with the cliniques of the *Allgemeine Krankenhaus*, who, from his position in the medical society of the city, has the best opportunities for becoming conversant with everything of importance which may occur. His reports may be depended upon for strict truthfulness and absolute impartiality. Dr Mercer Adam, of Boston, has undertaken the charge of translating and editing these "Letters," and has consented to add to them such explanatory notes and references to current literature as may seem requisite.

GALVANO-CAUSTIC OPERATIONS AND LARYNGOSCOPY.

Vienna, 18*th August* 1860.

Science recognises no nationality, and owns no fatherland; but it is the intellectual product and the common inheritance of all lands. The very vastness of the world in which it lives and moves constrains its disciples to band themselves together in a common league, and to hold spiritual converse with each other. Whatever of importance may occur at any spot on the surface of the globe should be made to traverse the world with rapidity; for every new thought is the germ of something greater in the Future, and the more quickly it is promulgated, the more speedily may it be expected to spring up and to yield us a golden fruitage. I have, therefore, great pleasure in now commencing a series of periodical reports on the state of medical science in Vienna, and in Germany generally, and enter upon my task in the confident belief that I shall be able to communicate to my professional brethren in Great Britain much that is truly valuable for them to know.

My readers must not accuse me of self-conceit, if, first of all, I speak of what is going on in Vienna, which, with its numerous and large medical institutions, and its phalanx of celebrated scientific men, offers us rich treasures of knowledge. But I promise, at no distant date, to discuss the medical doings of importance which are taking place elsewhere in Germany.

Two subjects have lately engrossed the attention of practical men in Vienna:—Galvano-caustic operations, the surgeons; and Laryngoscopy, the physicians. The former was introduced into Vienna by Dr Zsigmondy, *Primär-wundarzt*, or chief-surgeon, in the *Allgemeine Krankenhaus.* He has been at great expense in the manufacture and improvement of Middeldorpf's ingenious apparatus, which was the first employed in this city; and he has used it very extensively in his practice.[1] He soon convinced the profession of its manifold utility, and its applicability to all sorts of operations; and he has fairly established for it an honourable place among our recognised surgical instruments. This speaks greatly in favour of the apparatus, if, setting aside the charm of novelty which attaches for a time to many inventions, we reflect how very few new instruments are really worthy of being admitted into the surgical armamentarium. Zsigmondy has published the results of his operations with the galvano-caustic apparatus, in a series of articles in the *Wien Medic. Wochenschrift*, and has sent reprints of these papers to most of his friends. It reflects very great credit on Dr Zsigmondy, that here, in Vienna, where the most trifling surgical matters are immediately taken up and monopolised by eminent professors, he has been able, unaided and single-handed, to bring his system into good repute and extensive popularity in so very short a time.

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[1] The galvano-caustic apparatus was originally invented by Professor Middeldorpf, of Breslau, six years ago, as a means whereby bloodless surgical operations might be performed. Since its introduction, up to the present time, it has been steadily advancing in the estimation of surgeons, both in France and Germany, but its use in this country has been very limited indeed. Middeldorpf employs Grove's method of generating thermo-galvanism by means of platinum and zinc plates immersed in acid; and the electro-thermal current thus generated is made to ignite, to a white heat, copper wires and platina plates, which are attached to the apparatus; so that these may be applied either for purposes of cauterization (as in fistulous ulcers, etc.), or of amputation, as in the removal of tumours, polypi, and vascular organs, such as the tongue and penis, where there is great risk of hæmorrhage from the use of the knife. For a full description of the instrument, and the uses to which it may be applied, I would refer the reader to the original treatise work, "*Die Galvanokaustik*, *ein Beitrag zur Operativen Medicin.* Von Prof. Middeldorpf. Breslau, 1854." Dr Zsigmondy, in the papers alluded to by our correspondent, gives an interesting case, in which amputation of the penis was performed by means of the galvano-caustic noose; also cases of extirpation of tumours, removal of polypi, and hæmorrhoids, etc., in which the instrument was found very useful. Professor Schuh, the eminent surgeon of Vienna, has also published some very satisfactory results which have been achieved by him. In two of his cases, cauliflower excrescences of the uterus were successfully removed without hæmorrhage; and there was no return of the disease, after ten months, in either case. Schuh also has been very successful in amputation of the tongue for carcinoma, which he accomplished, without hæmorrhage, by the galvano-caustic process, and the patient recovered capitally. —*Ed.*

As regards Laryngoscopy, I think that this novelty has wrought more mischief than benefit in Vienna; for, ever since it was first heard of, it has been the occasion of constant squabbles and miserable contentions. First of all, the profession began to quarrel about the priority of the invention, and as to who was entitled to the honour of the discovery. Innumerable articles appeared in the medical press, containing the most contradictory statements, showing how very little the writers really knew about the subject, which were evidently published by men who rushed into print for the sake of appearing as authors. The controversy has lately broken out afresh, and little wonder, for one of these critics has solemnly written that a patient should not be laid on his face if we wish to look down his windpipe!

You, in England, must not be jealous of foreigners claiming all the credit of the discovery, for some share of the merit undoubtedly belongs to you.[1] At the

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[1] Dr Johann Czermak, Professor of Physiology at the Hungarian University of Pesth—to whom great merit is due for his introduction of this instrument to the profession—has laid claim, we believe, to the honour of its invention. We agree with our correspondent, that his title to this is very doubtful. Our own great surgeon, Liston, was probably the first who suggested the use of such an apparatus for examining the larynx, many years ago; and Messrs Weiss and Son, the surgical instrument makers, of London, claim the credit for the late Mr Avery. In a letter, published in the *Lancet* of 16th June, these gentlemen say that, fourteen years ago, they made a "lamp and reflector for examining the ear, throat, and different canals of the body," under the directions of Mr Avery, which was subsequently exhibited by them at the Great Exhibition of London in 1851. When in Vienna, in the summer of 1858, I was told that the idea was taken from a sort of mirror contrived by Garcia, the celebrated singer, by which he was in the habit of examining the throats of vocalists, to judge of their probable powers and compass of voice.

The instrument called the Laryngoscope, as used by Professor Czermak, consists of a concave mirror, similar to that used with the ophthalmoscope, perforated by a central ocular hole, which is used to concentrate the rays of light, and throw them into the fauces of the person to be examined. There is also another flat speculum, mounted, at an obtuse angle, upon a long, curved, and slender handle, which admits of being easily moved in all directions. This speculum is generally made of very highly-polished metal, of a diamond or square shape; and it is introduced into the fauces with its back resting against the uvula, so that the mirror-surface faces the opening of the glottis. The patient requires a little preliminary training to enable him to tolerate the presence of this mirror between the walls of his palate during the operation. Presuming that this has been managed, the operator depresses and pulls forward the tongue by means of a spatula; he then introduces the flat speculum into the fauces, and by means of the mirror casts the rays of light, from a lamp placed by the side of the patient, back into the throat, so that they fall upon and completely commencement of the discussions on the subject, Dr Joseph Gruber, of Vienna, reminded the disputants that, in honour, justice, and truth, a share of the credit of its invention should be awarded to your distinguished countryman, Mr Wilde, of Dublin, who, in his admirable work on Diseases of the Ear, had recommended a similar instrument for the purpose of examining the pharyngeal extremity of the Eustachian tube. To be sure, the little mirror was not called a laryngoscope by Mr Wilde; but still, to quote the words of one of our most celebrated poets, "Wo Begriffe fehlen, stellt zur rechten Zeit das Wort sich ein."

By means of this little instrument[1] we have been enabled to examine carefully the whole of the interior of the larynx, and to watch the mechanism of the complex organ of voice. The instrument may prove very useful both in a physiological and pathological point of view, but, as yet, we have not gained much additional knowledge from its employment. Should anything of importance occur in connection with its use, you may depend on my losing no time in acquainting you with the full particulars. Meanwhile, I would advise those of your readers who may feel an interest in the matter, and who desire to become acquainted with the many minor points connected with it, to consult the files of the *Med. Wochenschrift*, the *Zeitschrift der Gesellschaft der Aerzte*, the *Allgemeine Wiener Med. Zeitung*, and the *Zeitsch. für practische Heilkunde. Ma foi!* I promise them they will find more written therein than they have patience to read.

Apropos of professional journals, I must inform you that we are to have a new medical periodical. A Vienna physician, Dr Markbreiter, has discovered that "a system of rational therapeutics is the sole aim and end of all medical art, and that every individual natural science is only to be considered as auxiliary to the realization of this beautiful and sublime object." He is, therefore, commencing a journal, which is intended to adapt this programme faithfully to the requirements of all accomplished practical physicians. It is to be called the *Wiener Medicinal-Halle* (the "Vienna Medical Hall"), and is to appear in weekly numbers, as well as in monthly parts. The first specimen number has just been issued. It might have had a happier name than that which has been given to it; for "Halls," or emporiums, are intended for the reception of more material products than are likely to be contained in its pages. People fancy the whole affair has been got up to attract notoriety. We shall see.

The well-known *Zeitschrift der K. K. Gesellschaft der Aerzte* (the "Journal of the Imperial Society of Physicians") is also about to undergo a metamorphosis. After the 1st January 1861 it will be issued in weekly numbers, as well

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illuminate the speculum. He then applies his eye to the central perforation in the concave mirror, and during each inspiration he can observe distinctly the interior of the larynx clearly reflected on the speculum. The image of the larynx thus obtained is, of course, an inverted picture.—*Ed.*

[1] I hope, ere long, in one of my articles on the Vienna hospitals, to return to this subject, and I shall then allude to some of the appearances observed within the larynx by means of this little instrument. The chordæ vocales can be seen acting during speech, and I believe some observers have even been able to see down the trachea as far as its bifurcation.—*Ed.*

as in monthly parts, and the editorship will then pass into new hands. In fact, it will be conducted by several committees (composed of members of the Society), which have been appointed to take charge of all the various departments of medical science, and to publish periodical reports upon their specialties in the pages of the journal. So, in future, according to this novel plan, we may expect to be instructed about tumours by the Tumour Committee, about fractures by the Fracture Committee, and so on. Singular to say, the Society, in arranging their programme of these special departments, have entirely omitted the science of Otiatrics; so that the readers of the journal will have no one to give them any information about diseases of the organ of hearing. Were I disposed to be malicious and ill-natured, I might comment very severely on this unwarrantable neglect of so important a subject as aural surgery; but perhaps the Society may yet think better of the matter, and repair the omission. "Better late than never."

Dr Lunda, a young military surgeon, has lately published a paper in the *Med. Wochenschrift*, which has attracted considerable notice, detailing the wonderfully successful results which have been obtained by him in the treatment of *Blenorrhea oculi*, or purulent ophthalmia, by the application of the essence of sabine[1] to the affected organ. Our oculists will assuredly be stimulated to make further experiments with this new remedy; and I hope that they will be able to confirm Lunda's favourable report.

At present, profound quiet reigns in all our scientific societies; for, as this is holiday season, there are no meetings held or business transacted. So soon as the period of activity begins, you may expect to have reports from me concerning all that is worthy of record.

Most of our Professors are off on their annual vacation tours. Before they left town, we had the election of a new Dean of Faculty, in which office Professor Kurzak succeeded Professor Rokitansky. The Dean is chosen annually; and usually, long before the day of election, it is not difficult to guess who will be chosen to the office.

Here, for the present, I conclude; and I trust very shortly to be able to send you another and a longer letter.

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[1] I cannot state, until I hear further from Vienna, the exact nature of this preparation. Probably it is a solution of the Ol. Sabinæ in spirit.

Part Third.

PERISCOPE.

MEDICINE.

MODE OF ACTION OF PERCHLORIDE OF IRON.

At the Academy of Medicine, a lively discussion has been going on relative to the action of perchloride of iron as a therapeutic agent. M. Trousseau, at the meetings of May 29th and June 5th, entered at great length on the doctrines laid down in a paper on the subject by M. Devergie. Practitioners, according to this memoir, may be divided into those who explain the action of such remedies in the purely chemical effect produced by their introduction into the blood, and those who assert that vital action alone is concerned in the results thus produced—that a dynamic, and not a chemical, effect is exercised by them.

According to the theory of M. Burin Dubuisson, a small quantity of perchloride of iron is sufficient to thicken (épaissir) the blood so much as to retard or impede the capillary circulation. This action, however, is temporary, and must not be confounded with the regeneration of the blood accomplished by that agent. M. Dubuisson considers, with M. Mialhe, that the assimilation of iron for the formation of blood globules takes place while the iron is in a state of peroxide, and not of protoxide; that ferruginous protoxides do not act upon the albumen; that they are absorbed; that they circulate in the blood, pass to the lungs, and are converted by the influence of the oxygen inspired into peroxides, and then exercise their influence on the blood. Persalts, however, by not requiring such preliminary transformations, act much more rapidly than protosalts do,—the acid of such salts unites with the soda in the blood, and the peroxide with the albumen, forming an albuminous material at once taking part in the formation of blood globules.

On the other hand, the partisans of the dynamic theory, while admitting the diminution of red globules in the blood during chlorosis, and their increase in quantity following the administration of iron, do not consider these facts as proving that this iron has been absorbed. They do not regard chlorosis as resulting from diminution in the quantity of iron contained in the blood. It would appear, from recent experiments, that, notwithstanding the paucity of blood globules, the quantity of iron is not defective; and they therefore conclude that the favourable action exerted by ferruginous preparations is due to the influence they have in exciting the processes of digestion and nutrition —that is, on the digestive apparatus (MM. Trousseau and Pidoux). According to M. Meran, of Bordeaux, who has advanced certain hypotheses on this matter, the perchloride of iron acts directly on the capillary system by its tonic and stimulant powers,—contracting the coats of these vessels, so as to prevent the escape of their contained fluid, and in this way arresting hæmorrhage.

Looking at both these exclusive theories, M. Devergie considers neither of them to be well founded. However much the mere chemical action of such substances on the blood may seem to account for their effects, we cannot, says he, institute a comparison between the digestive or vascular system and the apparatus of a laboratory; and, on the other hand, the rapid appearance of ferruginous preparations in the blood, and the immediate effect it produces in hæmorrhage, preclude the idea of its action being exclusively of a mere dynamic or exciting nature on the digestive or vascular organs. He rather considers that these preparations act in both ways; that is, by their entering at once into the blood and improving its quality, while at the same time they exert a beneficial effect on those organs on which they seem to have a stimulating influence—thus reconstituting the blood and improving the digestion simultaneously.

The two theories here attacked, and the hypothesis advanced in refutation of them, form a question involving the whole laws of therapeutics, and by its connections extending to the general action of all medicines. M. Trousseau has all along objected to the doctrine of such remedies as this acting exclusively by their chemical properties. At two consecutive meetings of the Academy of Medicine, he has accordingly discussed the question thus opened up; and, in concluding his address before that body, epitomises the whole drift of his observations in these words:—" I have now concluded. The science of therapeutics will be nearer the truth when our ignorance of the mode of action of remedies is more candidly confessed, when each drug is more specially studied, and when experimental research is more sedulously conducted."—*Gazette des Hôpitaux*, May and June 1860.

ON THE SULPHATE OF CINCHONINE IN THE TREATMENT OF INTERMITTENT FEVERS IN THE FRENCH ARMY. BY M. MICHEL LEVY.

The great expense incurred in the hospitals and infirmaries of the French army by the amount of sulphate of quinine employed in the treatment of intermittent fevers, especially in Corsica and Algeria, has led, besides the extension of prophylactic measures, to the endeavour to obtain substitutes for the quinine. After various proposals, which have met only with indifferent success, the salt of cinchonine has been more recently experimented on with more satisfactory results in the hospitals of Algiers, Oran, Constantinople, Cherchell, Rome, and La Rochelle. The reports of the chief medical officers of these establishments, which have been published, by order of the Minister of War, in the *Recueil of Military Medicine, Surgery, and Pharmacy for* 1859, afford the following interesting data:—There was a total of 205 fevers, of which 106 were first attacks and 99 relapses; the number of cures amounted to 194; the sulphate of cinchonine failed 11 times. Out of 115 of these cases, which had been carefully observed, 11, which had resisted the sulphate of cinchonine, were distributed as follows:—9 out of 58 treated at Oran; 2 out of 6 treated at Rome. In 19 cases, the first dose had arrested the fever; 37 had one attack during the treatment; 16 had two attacks; 12 had three; 2 had four; 2 five attacks, etc. From these reports it further appears that the association of the sulphates of quinine and of cinchonine neither increased nor diminished the individual power of each. In the various trials the toxic effects of the cinchonine were well marked: in the digestive system, nausea, gastralgia, vomiting, colic, diarrhœa (some of which symptoms, however, may have been due to the fever rather than to the drug); in the nervous system, general excitement, headache, vertigo, intoxication, noise in the ears, deafness, disorders of vision, nervous tremors. But although the toxic effects were fully equal to those of the sulphate of quinine, the therapeutic effects were much inferior (3 : 10).

In 1856, at the suggestion of M. Soubeiran, a series of experiments was made at Blidah by M. Laveran, principal medical officer there, on the comparative effects of the sulphate of cinchonine and of quinium, the results of which were published in the *Gazette Médicale*. M. Laveran divided his observations into four parallel series, according as the fevers were treated—1st, by expectation; 2d, by sulphate of quinine; 3d, by sulphate of cinchonine; 4th, by quinium. He directed his attention not only to the attacks of fever, but also to the accompanying disorders, the earthy hue of the skin, the enlargement of the spleen, and dropsies; and to make the comparison more exact, he employed the same quantity of cinchonine and of quinine, instead of using larger doses of the former, as most military physicians do. The general results were, that patients who before admission to hospital had suffered 5 attacks, had, on an average, with the quinine treatment, 1·30 attacks in the hospital; with the treatment by cinchonine, 2 attacks. Patients who had been the subjects of 6 attacks before admission, gave the average, under quinine, of 0·70; under cinchonine, 1·70 attacks. The cinchonine appeared less efficacious in proportion as the fevers were more recent and more intense. According to M. Laveran, neither the quinine nor the cinchonine had any effect on the engorgement of the spleen.

The observations made under the direction of M. Michel Levy in the hospitals of the East in the campaign of 1854, were postponed from the summer to the autumn season, in consequence of the violent epidemic of cholera which broke out at the Piræus, Gallipoli, and Varna. The experiments with the cinchonine were begun, however, in September, in the hospital of the Piræus under the immediate charge of M. Artigues, and in that of Varna under M. Barby. In the hospital of the Piræus the experiments took place in September and October 1854. The medicine was administered only in presence of the physician, and after one or two paroxysms had been observed. A solution was used of about four grains to ʒiij. water. It was intended to experiment only on cases free from complication, but this was found impossible from the previous bad health of the troops during the summer. 35 fever patients took sulphate of cinchonine; of these, 9 were affected with regular intermittent fever, 8 remittent fever, 5 had fever of an irregular type, and 3 continued fever of a typhoid form. *Regular intermittent fever.*—Out of 9 cases of quotidian, 7 were first attacks, 2 relapses; 7 were simple fevers, 2 complicated, one with bilious symptoms, the other with acute bronchitis. The dose of cinchonine was 8 to 12 grains; 7 cases yielded to the first dose, 2 required a second. *Bilious and inflammatory remittent fever.*—The dose was 15 grains. Seven times out of eight the attack was cut short or diminished by the first dose, and the cure was complete after three doses. In 8 patients the convalescence was fairly established from the seventh to the eighth day. These, however, still suffered from headache and languor, and only slowly recovered their strength. The mean duration of the treatment was thirteen days, and there was no relapse. The medicine was not equally well borne by all the patients: 3 had vomiting; in 2, a diarrhœa of short duration came on; and twice there were noted, dazzling of the sight, vertigo, violent headache, and extreme weakness, symptoms which disappeared as soon as the medicine was suspended. *Irregular intermittent fever.*—Five cases cured. M. Artigues introduces into this group two cases of paludal cachexia, in which the cinchonine was of the same service as sulphate of quinine. *Typhoid continued fever.*—Only one case. The sulphate of cinchonine had no effect, and as the case tended to become malignant, no time was lost in administering the sulphate of quinine, which produced a "heroic" effect. In the hospital at Varna, M. Barby subjected at the same time one series of patients to the quinine, and another series to the cinchonine treatment. He gave double the dose of cinchonine that he did of quinine, administering it during the intermittence, eight or ten hours before an attack, and taking care to observe, previous to using it, that the attacks of fever were either increasing in intensity, or, at least, showed no tendency to spontaneous decline in violence or duration. The cinchonine was administered only after the fourth or sixth attack had been observed. 40 patients took the sulphate of cinchonine; but at the time of M. Barby's report only 22 had been observed to their conclusion. Of these there were 10 regular intermittents, including 8 quotidian and 2 tertian; 1 irregular intermittent; 9 remittent, including 6 quotidian, 1 tertian, and 2 typhoid; besides 2 cases of sub-continued fever. Nearly all the patients had voluminous spleens, and had been previously attacked with fever once or oftener. On an average, each patient took ʒi. ℈i. of sulphate of cinchonine; the minimum was ℈ij., the maximum ʒiij. *Intermittent fevers.*—The first dose arrested the fever in 3 cases out of 11, the second dose in 4, the third dose in 2 cases. The first dose sensibly diminished the following paroxysm, where it did not entirely prevent it. The two remaining cases required four doses of cinchonine. In these cases the pulse fell in three days successively to 55, 50, 48, and 45 pulsations, which was the inferior limit of frequency. The headaches disappeared completely, and the splenic dulness was in some cases reduced in extent. There was only one slight relapse. *Remittent and sub-continued fevers.*—In 9 cases the first dose was only followed by a diminution in the intensity of the febrile phenomena; but the cure was not more slow than with sulphate of quinine. The same effects were observed in the *typhoid intermittent fevers.* And in some cases of the paludal cachexia not included in these returns, M. Barby ascertained the favourable effects of the sulphate of cinchonine, which were observable at the end of a few days.

These observations, when compared with those made by other medical officers at various stations, present very considerable differences in their results, which may be due to the different climates where the experiments were made, the effects of the season, the vernal fevers being treated by some observers, the autumnal by others, etc. But if all the elements of the problem cannot be decided, yet there seems to M. Levy sufficient evidence on which to found the following conclusions:—1st, Expectant treatment is not attended by serious inconvenience in simple intermittent fevers under proper hygienic conditions; it is to some extent indispensable in testing experimentally the substitutes for quinine. 2d, Part of the successful cases, ascribed to cinchonine as well as other febrifuges, are due to the well-known fact of the spontaneous decline of febrile attacks. Speedy cures, previous to the occurrence of an attack in hospital, and those of vernal fevers, belong to this category. 3d, The fevers of summer and autumn, although more obstinate than those of spring, present a certain proportion of spontaneous cures. Such were a part of those in the Piræus in September 1854, cured by a single dose of 8 to 12 grains of sulphate of cinchonine; and probably the fever treated with apparent success, by means of salicine, at the hospital of Calvi, in Corsica, in 1835, were in reality spontaneous recoveries. 4th, If in malarious countries, such as Corsica, Algeria, the Piræus, and Varna, where the maismatic effluvium is at the maximum, a large number of the fevers get well spontaneously, the proportion of such cases must be much more considerable in temperate climates, such as Paris and other towns of the interior of France, where the paludal influence is much less marked and often very weak. At the military hospital of Lille, the venerable Physician-in-Chief, M. de Chamberet, used to cure intermittent fevers with pure water, distributed to the soldiers in vials, labelled with *Protoxide of Hydrogen!* 5th, The outlay for sulphate of quinine may, in accordance with the preceding remarks, be considerably reduced both in civil hospitals and in the army; the sulphate of cinchonine will be sufficient in the treatment of most fevers which occur in spring and up till the beginning of June, and even in a certain number of cases in summer and autumn. In winter, when there are only relapses without any tendency to the malignant type, the same treatment will do, whether preceded or not by a dose of the sulphate of quinine, or mixed with a small quantity of the latter, as advised by the Council of Health for the army. 6th, No military physician has attempted the employment of cinchonine in the malignant fevers (fièvres pernicieuses): a reserve which is recommended by the results of experiments, and which ought to be imitated in civil practice. 7th, Another source of economy consists in a rational *dosing* of the drug: excessive quantities being used both in Africa and in France. Impartial observation has shown that, even in malarious countries, it is rarely necessary to raise the dose above 12 to 18 grains. 8th, Lastly, the expense for sulphate of quinine to remedy splenic engorgement is, in most cases, sheer waste. In recent cases, the treatment may be of service; but in tumours of the spleen of long standing, the quinine lavished with costly perseverance is found to produce no sensible modification of the enlargement. In conclusion, M. Levy refers to the fact, insisted on by the Council of Health of the Army, that there is a singular contrast between the toxical energy of the cinchonine and its therapeutic insufficiency—a subject which deserves renewed research. In the administration of cinchona, the toxical and therapeutic effects of the cinchonine are combined with those of the quinine, and the sum of their actions forms the peculiar value of the cinchona. And if the sulphate of quinine is the resource of the physician in combating fevers, which resist the action of the sulphate of cinchonine, so also, then, are fevers which repel the sulphate of quinine, but yield to cinchona. In fevers which have frequently relapsed, and in those which have induced a cachectic condition of the system, it is the cinchona which deserves the preference.—*Bull. Gén. de Therap.*, May 1860.

ROUGET—OBSERVATIONS ON THE ACTION OF NICOTINE UPON THE HEART.

Nicotine has been regarded as possessing in the highest degree the property of rapidly abolishing muscular irritability. But the action of this poison on the heart presents a remarkable singularity in opposition with the preceding opinion. Thus, in frogs killed by the instillation of a drop of solution of nicotine into the eye or under the skin, the pulsations of the heart persist for a long time after every trace of excitability has disappeared in the muscles of locomotion. When these pulsations have become weaker and slower, the direct action of nicotine upon the heart restores them instantaneously; the energy of the muscular contractions is at first manifestly increased; then these contractions become permanent, and the pulsations are arrested, the ventricle remaining in a state of tonic spasm or convulsion, which completely obliterates its cavity. In birds and mammalia killed by the inhalation of chloroform, the ventricles remain without movement in the condition of diastole; the right auricle alone is the seat of some feeble tremulous motions. If the ventricles are then excited, either by punctures or by a galvanic current, the muscular substance remains inert, or exhibits only a few feeble contractions, which are entirely local. Under these circumstances, the contact of a drop of concentrated solution of nicotine determines spontaneous and general contractions, and gives rise to energetic reaction under stimulation by punctures or the electric current, and finally produces a state of permanent contraction.—*Journal de Physiologie*, July 1860.

SURGERY.

FOREIGN BODIES IN THE BLADDER.

We have already published a notice of M. Civiale's observations in these cases. The following addendum may not be uninteresting:—In a table drawn up by M. Civiale, in 1838, and containing a collection of 166 cases of the kind, we find the following articles removed from the bladder: 25 needles and pins, 1 bodkin, 2 ear-pickers, 6 fragments of bone, 5 teeth, 18 sounds or bougies, flexible and rigid, 12 pieces of wood, 6 needle-cases, 1 cork, 13 plant stems, ears of corn and straws, 9 pieces of lint, 6 pipe-stems, 3 glass tubes, various kinds of fruit, feathers, and hair, not to mention other matters accidentally introduced during operations, gunshot wounds, etc. Since that period, M. Civiale has extracted from this viscus, 19 sounds and bougies, a leather strap, two penholders, an artist's brush-handle, 2 pieces of bone, a piece of tendon, a lamp wick, a barometer tube, and a medal.—*Gazette des Hôpitaux.*

MIDWIFERY.

ON THE INFLUENCE OF LEAD POISONING ON CONCEPTION. BY M. CONSTANTIN PAUL.

The influence of certain kinds of chronic poisoning, such as that by lead, upon conception and its products, and the hereditary transmission of the toxic effects, are points of considerable interest in regard to pathology, to medical jurisprudence, and to therapeutics. M. Constantin Paul, a distinguished intern of the hospitals, has had his attention directed to the subject in consequence of observing a remarkable case, in which a woman, after three successful confinements, had, by change of her employment, been exposed to the vapours of lead; and in her ten subsequent pregnancies, eight of these had terminated in miscarriages, and one of them by the birth of a stillborn child. In further researches, the author has investigated 81 cases, showing the influence of the saturnine poisoning, the effects of which are manifested in women by menorrhagia occurring after the menses had been suppressed for one or several months, along with other symptoms indicating pregnancy, by abortions or miscarriages from the third to the sixth month, and by premature deliveries, in which the children are born either dead or dying; and in children, by a mortality considerably above the average during the first three years of life. In his first series of observations, which relate to women employed in polishing printing types, all of whom had exhibited symptoms of lead poisoning more or less serious, he found the following results:—Four women had had collectively fifteen pregnancies, out of which there were ten abortions, two premature deliveries, one still birth, one child dead within twenty-four hours, and only one child living; besides three attacks of menorrhagia in one of the mothers, and frequent attacks of it in another. In a second series, five women had borne in all nine children at the full period before exposure to the influence of lead; none of them had either miscarriage or any other accident of pregnancy. After being subjected to the action of the lead poison, thirty-six new pregnancies had occurred;—among which there were, twenty-six miscarriages at from two to six months, one premature delivery, two infants were stillborn, and five children died, four of them within the first year. A woman following the same employment as the above, that of polisher, had become five times pregnant, and had suffered five miscarriages; she left her employment, and, becoming subsequently pregnant, she was delivered at the full period, without accident, of a healthy child, which is still alive. Another series of observations shows the same alternation of favourable or unfavourable pregnancies, according as the mother abandoned or resumed her employment. M. Constantin Paul has ascertained that a similar deleterious influence may proceed from the male parent, when he has been employed in working with lead. This category of observations comprehends seven observations, including altogether thirty-two pregnancies occurring while the father was exposed to lead poisoning. Out of these thirty-two pregnancies, twelve children died before the full term (eleven abortions and one still birth); and of twenty infants born alive, eighteen died in the first year, four in the second, five in the third, one only beyond that period. Finally, a last series of cases shows that the fœtus may perish under the probable influence of the saturnine poisoning, even when no symptoms of that condition have appeared in the mother, either in consequence of the minute quantity that had been absorbed, or where the quantity was considerable in consequence of some peculiar constitutional immunity.—*Arch. Gén. de Méd.*, May 1860; and *Bull. Gén. de Thérap.*

URTICARIA AS A SYMPTOM OF IRRITATION OF THE FEMALE SEXUAL ORGANS.

BY PROFESSOR SCANZONI.

Professor Scanzoni observes that although it has long been known that chronic affections of the female sexual organs are not infrequently accompanied by skin diseases (as urticaria, eczema, acne, psoriasis, chloasma, etc.), the influence of a more sudden irritation of these organs upon the cutaneous surface is by no means so well established. He has been enabled to find no very definite statements upon the subject, and this leads him to communicate some cases tending to establish such a consensus.

A lady, aged 34, had been under his care for some time with slight retroflexion of the uterus and chronic metritis, when he ordered four leeches to be applied to the vaginal portion of the cervix uteri. This little operation had been already performed once before without any ill effect, but upon the present occasion, ten minutes after the application had been made, the patient was seized with violent febrile action, and slight delirium. In half an hour she was seen by the author, who found her skin, and especially that of the face and upper part of the body, almost of a scarlet red. The temperature of the surface was considerably raised, and her pulse beat 136. She continued much the same during the night, and when seen next day, the face, neck, chest, arms, and thighs, exhibited, together with the intense redness, innumerable urticaria elevations. In a day or two the exanthem had entirely disappeared, a distinct desquamation, however, taking place on the face and neck. As this was the first case the author had ever seen in which these symptoms followed the application of the leeches to the cervix, he did not believe in their dependence upon this, and again ordered them to be employed. Four times this was done without any unpleasant occurrence, but on the fifth occasion the whole series of symptoms above described were reproduced, and that so rapidly after the biting of the leeches, that any doubt as to cause and effect could no longer be entertained.

In a second case, a woman, aged 28, was admitted into the Würzburg Midwifery Institution on account of chronic uterine infarctus, and five leeches were ordered to be applied to the cervix. Scarcely had they taken hold when she complained of the most violent labour-like pains in the abdomen, and although these soon moderated in force, they were accompanied with such intense febrile action that the entire body glowed with heat, the pulse rose to 140, the carotids pulsated visibly, and the face, neck, and chest exhibited an intensely red colour, to which were added in a very short time a large eruption of urticaria elevations of a palish colour. The eruption was accompanied by great headache, inclination to vomit, and excessive lassitude, symptoms which continued to the following day, although the exanthem with the accompanying fever disappeared entirely after three hours' continuance. This patient often had suffered from urticaria at the menstrual periods, without, however, its being accompanied by such violent symptoms.

The third case occurred in the person of a young lady, aged 26, who, on account of long-continued chronic oöphoritis and metritis, required local bloodletting. In the course of sixteen months four or five leeches had been applied eight times. On the ninth occasion an intense redness covered the skin, and the patient complained of the most violent pain in the head. The temperature of the surface was much raised, and it was almost entirely covered with innumerable, minute, prominent, white elevations. In the course of an hour these appearances gradually subsided, the headache continuing for twenty-four hours longer. The author is aware of a fourth case of the same kind, but is unable to furnish the particulars.

Professor Scanzoni believes that these cases deserve the attention of those occupied with the diseases of women, as well as of dermatologists. They admit of no other explanation than that the irritation of the uterine nerves, caused by the bite of the leeches, induced an entirely unusual, and in its mode of origin inexplicable, disturbance of the vascular system, which again, in a mode which is to us equally unintelligible, gave rise to the production of the eruption of urticaria. In proof that these appearances were not produced as a consequence of any poison being conveyed through the medium of the bite of the leech, it is to be observed that similar symptoms never result from the application of leeches to other regions of the body, while it is to be observed that even very slight irritation of the sexual organs, as that produced by examination with the finger or speculum, or by the application of caustic, will in many very sensitive women give rise to erythema of the face, neck, breast, etc., which disappears as rapidly as it comes on.—*Würzburger Medicin. Zeitschrift*, band i.—*Med. Gaz. and Times.*

TOXICOLOGY.

ON THE DETECTION OF PHOSPHORUS. BY M. COUSERAN.

The process lately recommended by Mitscherlich for the detection of this substance in cases of poisoning, is well known to be one of extreme delicacy; and one author cited by M. Couseran, in speaking of it, affirms, that "the process in question is as delicate as that of Marsh for the detection of arsenic." M. Couseran, fearing that such an assertion might lead to the supposition that phosphorus could be discovered in all cases of poisoning with this substance, was led to perform certain experiments, and to lay the results before the Academy of Sciences at Toulouse.

The process of Mitscherlich possessed the undoubted advantage over the former methods, of being conducted in close vessels, and of allowing the phosphorescence to be more satisfactorily seen. This phosphorescence is characteristic of the presence of the metalloid, and is often very transitory when we are operating in the open air, and with small quantities of phosphorus. By this process we can also collect in the receiver of the apparatus globules of phosphorus, should it have been present in sufficient quantity, and also the phosphoric acid which is formed during the combustion, which has afforded the phosphorescence. But it does not follow that this process can be compared to that of Marsh for the detection of arsenic. For, although the two poisons produce in the economy very analogous effects, their mode of action is by no means similar. Phosphorus only becomes poisonous in changing its condition; that is to say, in becoming phosphorous or phosphoric acid, and in combining for that purpose with the oxygen of the air found mixed with the food, or borrowed from the organs with which it is in contact, and which it inflames and corrodes; or possibly in becoming phosphoretted hydrogen—a gas regarded as one of the most active poisons. Arsenic, on the contrary, once swallowed, not only inflames and corrodes the tissues, but passes by absorption into the circulation, and is deposited in various organs, where it remains a sufficient length of time to admit of its detection after its complete elimination from the alimentary canal. Thus it is very probable that, in cases of poisoning with phosphorus, when the vomited matters and the dejections have not been kept and placed in some fluid that preserves the phosphorus unchanged, the process of Mitscherlich may fail. The inflamed portions of the stomach and intestines may not give rise to phosphorescence, and the reactions significant of the presence of phosphoric acid and of phosphates will not justify the expert in affirming the presence of phosphorus, as both phosphoric acid and the phosphates enter into the composition of the human body. While, on the other hand, in poisoning with arsenic, even when the digestive tube contains no arsenic, the expert, by means of Marsh's apparatus, can obtain from the body of the victim enough of the poison to enable him to affirm that poisoning had occurred, and to present in open court the *corpus delicti*.

Some months ago, a man, in perfect health the previous evening, died on the following day, after a few hours' illness. The symptoms were so suspicious that the authorities ordered a criminal investigation. Lesions were found of a very questionable character in the stomach and in a part of the intestines; and a chemical analysis was instituted, and entrusted to M. Couseran and another chemist. The organs, which had been preserved in alcohol, were quite empty, and presented marks of strong inflammatory action. On the inferior part of the stomach violet-coloured spots were observed, which penetrated deeply the tissues of the organ. After searching in vain for any solid matter in the organs themselves, or in the liquid in which they had been preserved, which might give some clue to the poisonous agent, one portion was submitted to the usual process for the detection of the mineral poisons, but without success. The process of Mitscherlich was now tried; but after an hour's distillation, not the slightest trace of phosphorescence was visible. That the apparatus was in good working order, was evident from the fact, that when a portion of the end of a phosphorus match was introduced into it, phosphorescence was speedily produced. With such results, notwithstanding the acidity of the interior of the stomach, of the intestines, and of the liquid in which they were, while the alcohol which had been used, and of which a specimen sent by the authorities was carefully tested, was found to be perfectly neutral, and with the fact of the detection of phosphates, "we concluded that it was possible that a preparation of phosphorus had produced the changes observed in the stomach and intestines, but that, as no trace of phosphorus had been found, we could not positively affirm that poisoning had occurred." M. Couseran is inclined to think that both materials and time were wasted in the preliminary trials for other poisons, and he recommends that the process of Mitscherlich should be tried at once, as it does not interfere with the subsequent search for other poisons. From numerous experiments made by M. C., he found that phosphorus, finely divided, and mixed with alimentary matters, might be detected, several days after exposure to the air, by the ordinary methods, and with greater ease by the process of Mitscherlich. The same is true with regard to portions broken off the ends of lucifer matches. Such matches, macerated in alimentary matters, such as milk, soup, coffee and milk, wine, etc. etc., deposit fragments, which, after remaining dry and exposed to the air during several days, still burned with phosphorescence when touched with the end of a heated rod, or when thrown on a heated surface; and liquids separated by simple decantation from these particles, as well as after having been boiled along with matches, gave out, even after having been exposed for several days to the air, phosphorescent light by the process of Mitscherlich. The water in which the phosphorus of commerce is kept is an energetic poison. This water, which is slightly opaque, very acid, and in which no traces of phosphorus can be observed, if evaporated by simple exposure to the air, or gently heated, becomes concentrated, and, at a sufficiently elevated temperature, takes fire like grains of gunpowder; and yet, when placed in Mitscherlich's apparatus, gives rise to no appearance of phosphorescence, and the residue of its distillation evaporated in the air in a capsule, and concentrated, produces the same phenomenon of combustion as those just cited.

This process, therefore, affords to legal chemistry a means of detecting more easily minute traces of phosphorus contained in food; and by it the expert may act with the whole of his materials, without exposing them to any loss or destructive change. But will phosphorescence always be regarded as the surest test of the presence of phosphorus; and may not phosphorus, in certain pathological conditions, be found naturally in the economy; and is it not possible that in this apparatus phosphates may suffer a reduction in the presence of the sulphuric acid employed to carbonize the organic matter, and may thus give rise to phosphorescence? Such questions our author does not answer, but they must be kept in mind by future observers. M. C. answers, however, decidedly in the negative the assertion as to the comparative delicacy of the processes of Marsh and Mitscherlich; and he insists with great reason on the importance, in the investigation of cases of poisoning with phosphorus, of preserving discharges of all kinds, in order to afford every chance of its detection.—*Gazette des Hôpitaux*, 30th Sept. 1858.

POISONING WITH PHOSPHORUS—ATTEMPT AT POISONING WITH MATCHES MADE WITH THE RED OR AMORPHOUS PHOSPHORUS—RECOVERY—RENEWED ATTEMPT WITH THE ORDINARY LUCIFER MATCHES—DEATH—AUTOPSY—ANALYSIS.

Emily B., aged 26 years, a domestic servant, suffering from wounded vanity and affection, determined to poison herself. Some years previously she had read an account of two travellers who had been poisoned by coffee prepared in a pot in which a packet of lucifer matches had been inadvertently left, and she determined to take the hint. She soon made the attempt, but to her annoyance she suffered no inconvenience, in consequence of the matches she bought being prepared with red or amorphous phosphorus. For some time she relinquished her design; but she ultimately, on the 17th March, bought two sous worth of ordinary matches, coloured blue at one extremity, igniting easily on gentle friction. She took about four ounces of coffee, added more than three cups of boiling water, and made three cups of very strong coffee. Of this she drank one cup at once. She then added to the two remaining cups of coffee other two cups of boiling water, filtered the whole, and thus obtained a bottleful of pretty strong coffee. She took the phosphorized ends of all the matches and placed them at the bottom of the coffee pot, and allowed them to infuse for an hour and a half. She again reheated the whole almost to ebullition, and swallowed two cups of this infusion of phosphorized coffee. She said that this infusion, though warm and well sweetened, had a disagreeable taste of lucifer matches; but yet could be swallowed without repugnance. Immediately afterwards, she took a cup of ordinary coffee and retired to her bed, where she rested nearly an hour, only sensible of a slight degree of lassitude and headache which came on immediately.

Meanwhile, the police were informed of what had occurred, and a doctor was quickly called, who lost no time in sending her to the Hospital Lariboisière, where she was placed under the care of Dr Pidoux. The house-physician at once gave her an emetic of tartrate of antimony. An hour had only elapsed since she swallowed the poison. She vomited nearly half a pint of a clear glairy fluid, at the bottom of which lay a black pulpy matter, and two pieces of non-digested meat. The vomited matters had a strong alliaceous odour, and in them were observed particles of the blue colouring matter of the matches. Later in the evening, after taking a copious drink of water, she vomited a glairy fluid without any deposit, and free of any odour of phosphorus.

On the 18th March, at the morning visit, her features were unaltered, the tongue was slightly coated. She complained of having had a metallic taste in her mouth all the morning, and of an odour of lucifer matches which continued to annoy her. Since the previous evening she suffered much from discharges, which troubled her by their penetrating odour of phosphorus. The vomited matters also left in the throat a peculiar burning sensation. She said, that neither at the time of swallowing the poison nor since, had she felt any pain in the stomach. She complained only of a little heaviness. The bowels had not been moved since the evening. There was no fever. The face was slightly pale, the heat of the skin moderate, and the pulse was very slow (54); the respiration normal.

Her mind was quite calm. She mentioned that she had long ago determined on committing suicide, and that she only regretted that for the second time she had failed in her purpose. She declared that, as soon as she was well, she would throw herself from the tower of St Jacques. For a considerable time she had been in the habit of collecting the newspaper accounts of suicides and poisonings, to enable her to make up her mind as to the particular method she would choose. She was surprised that in the present instance she had not suffered more. She was, nevertheless, a girl of good intelligence, who gave all details with clearness, and narrated very well the history of her poisoning. She has slept a little this morning, though, as she says, the coffee agitated her a good deal in the beginning of the night. She had been tormented the previous night by heat and dryness of the nasal fossæ, as in a commencing coryza, and especially by a fixed frontal pain situated above the eyes. She has had nervous symptoms, in the shape of formication in the thighs and cramps in the feet and legs. In addition, in the course of the evening, she had well-marked venereal desires.

This morning, there only remains a little pain in the kidneys and thighs.

18th, evening. She has been much better to-day, has hardly vomited, and has asked for food.

19th. She only complains of headache and pain in the loins.

During the 20th and 21st, her condition was so favourable, that she was allowed to rise and walk about the ward for some hours. She had an allowance of food.

The house-physician, M. Paul, who reports the case, at this time thought that her recovery was complete, and that, from the small dose of the poison taken in the first instance, and the promptitude with which vomiting had been induced, a quantity sufficient to produce dangerous results had not entered the system. But M. Pidoux, who had seen several cases of phosphorus poisoning, warned him not to trust to this amelioration in the condition of the patient, which he believed would prove to be but transitory, and that some serious symptoms were to be looked for, especially hæmorrhages from various parts. This anticipation was realized on the following day, for on the 22d the patient was seized with epistaxis, and the catamenia, which ought not to have appeared for eight days later, came away in great abundance. She became feverish, her skin assumed a yellow colour; and in the evening, after taking a drink of milk, she vomited, and in the vomited matter there was a clot of blood. On the 23d the fever had increased, she had a jaundiced appearance, the skin was warm, and some spots of purpura were observed over the chest. She complained of pain over the region of the liver, and during the day she had slight hæmoptysis. Treatment, 15 grains of perchloride of iron in a julep, with lemonade.

The fever was stronger on the 24th. The skin was dry, hot, and burning, the yellow tinge was a little darker and more visible, the face was pinched, the lips were very dark, the gums bloody, the tongue dry and dark coloured. The belly was tense, and the hepatic region was painful to the touch. She died during the night.

Examination of the body twenty-four hours after death. The skin was yellow, the colour of sulphur, over the whole surface, with violet streaks here and there, especially in the more depending parts, where they united and formed an uniform violet tint. A blackish froth, resembling coffee grounds, escaped from the mouth and nostrils. There were no ecchymoses on the surface of the body, only the purpurous spots on the chest noted during life were still visible. The most striking circumstance observed was the remarkably healthy condition of the alimentary canal. No lesion was observed in the mouth, œsophagus, or stomach. No ulceration, softening, or even redness. The same might almost be said of the intestines. The small intestines were healthy. A red patch was found in the coecum, and another in the transverse colon. The rectum contained hard greyish fæces. The contents of the stomach and of the small intestines were composed of a blackish matter resembling coffee grounds, and what is found in cases of hæmatemesis. In the small intestines, it was more like the broken-down pulp of the spleen. The principal lesions, undoubtedly, were the bloody effusions in the thoracic and abdominal cavities.

Blood was effused into the substance of the transversalis muscle, which was detected by sub-peritoneal ecchymosis, the size of a crown piece. A similar effusion was observed in the cellular tissue behind the left kidney. The viscera generally were affected with apoplexy. In the left lung there were two apoplectic clots, the size of a large nut, and in the right an apoplexy *par infiltration* occupying the whole inferior lobe.

On the posterior surface of the heart, there were two or three small effusions beneath the pericardium, and another beneath the endocardium, in the cavity of the left ventricle.

The blood was neither coagulated in the aorta nor in the right side of the heart. There was only a syrupy liquid, like lees of wine, in these organs, even in the right auricle, where there was not the slightest trace of fibrinous clot. The thoracic aorta was surrounded with a layer of blood, which occupied its entire sheath, and a portion of the posterior mediastinum. There was also ecchymosis in the external membrane of the aorta.

The great venous trunks were empty.

The liver was covered with a series of violet points, which formed at the level of the tenth rib a transverse band of a diffused bloody hue, and penetrating but slightly the substance of the organ. Nothing particular was observed on the concave surface. The yellow substance prevailed, and was only here and there tinged with red points. The kidneys contained effusions below the serous membrane in the pelvis and calices, and on section nothing but a bloody fluid escaped.

The spleen was small, and of ordinary density. The brain and cerebellum were only slightly congested. The bladder and uterus were normal.

Report of the Chemical Analysis of the Vomited Matters. By M. Buisson.

The bottle contained about half a pint of a greenish grey liquid, holding in suspension a pulpy matter, and portions of flesh yet unchanged. A strong alliaceous odour was perceived, and in darkness the agitation of the bottle gave rise to phosphorescence. The reaction was slightly acid. Phosphorus was at once looked for by the following process. A small quantity of the material was filtered through damp paper, and was treated with nitrate of silver, when an abundant greyish brown precipitate was thrown down. This precipitate was re-dissolved by ammonia, leaving in suspension a blackish powder, which was metallic silver; as to the portion soluble in the ammonia, it was evidently chlorides from the stomach. In order to prove satisfactorily that the black precipitate resulted from the action of phosphorus, and not of the animal matters, upon the nitrate of silver, three ounces of the materials, diluted with distilled water, were distilled in a retort communicating with a receiver kept perfectly cold. The distillate had a slight garlicky odour, and at once precipitated black the nitrate of silver. To obtain the phosphorus, three ounces of the materials were left in contact with the same quantity of sulphuret of carbon, which is a powerful solvent of phosphorus. The sulphuret of carbon was decanted, filtered, and evaporated spontaneously in the air. The residue, of a yellowish white colour, presented a characteristic alliaceous odour, and in the dark was phosphorescent. It was introduced along with a little dilute nitric acid into a retort, and heated. Ruddy fumes of nitrous acid gas were given off, and the residue was dissolved, leaving on the surface of the fluid a slight greasy film. This film was separated by filtration, and the liquid was evaporated anew until the vapours ceased to be given off. The phosphorus was thus converted into phosphoric acid by the nitric acid. Saturated with carbonate of soda, it gave a yellow precipitate with nitrate of silver, as also with molybdate of ammonia. The alkaline phosphate which remained was evaporated to dryness, and transformed into pyrophosphate by calcination. Dissolved in water, it gave a white precipitate with nitrate of silver. The presence of phosphorus in the metallic state was manifest in the vomited matters. It was impossible to detect the slightest trace of the phosphoric or phosphorous acids which were subsequently formed by the oxydation of the phosphorus.

We have given this case at great length, not only for its interesting details, but also on account of the daily increasing importance of phosphorus as a poison. It is rapidly supplanting arsenic as a popular means of destroying life; and it is of great importance that some check should be given to its present dangerous facility of purchase in the form of matches and vermin pastes. This was hoped to have been attained by the discovery of the red or comparatively innocuous form of phosphorus. In France, this red or amorphous phosphorus is much used, and, as the case shows, used with great advantage to society, inasmuch as it defeats the intention of the suicide and murderer. In Great Britain, however, the yellow or poisonous phosphorus is alone met with; partly, it is believed, from the imperfect stability of this kind of phosphorus—a stability greatly weakened by our humid climate—and partly from an unwillingness on the part of manufacturers to undertake what they fear must prove a hazardous innovation.

M. Paul remarks on the small quantity of phosphorus employed, as it requires but little of the phosphorus paste to cover the ends of two sous worth of matches. Now, to this we demur; as in this country, where matches are dearer than on the Continent, we obtain for a penny upwards of one hundred and sixty matches tipped with phosphorus paste, and the ends of eight matches have been known to produce fatal effects. The dose in the present case we consider to have been a large one, remembering that the poisonous dose of phosphorus is stated by our best toxicologists to range from one-third of a grain to two grains, and also that the phosphorus in the form of paste acts with greater energy, in consequence of the fineness of its division. Again, the treatment, as reported, appears to us to have been anything but decided. Only one emetic appears to have been given, and there is no mention of the administration of purgatives, although on the morning following her admission to the hospital the patient complained of the metallic taste in her mouth, and of the persistence of the characteristic smell of the poison. We cannot help thinking, that had emetics and purgatives been freely administered, and had judicious stimulation followed their action, not only would the system have been almost entirely freed from the poison, but it would have been enabled to rally from the depression subsequently caused by the effect of the poison on the brain and blood. The peculiar condition of the blood in this case has called forth subsequent remarks in the same journal (*Gazette des Hôpitaux*, 3d July 1860) from M. Mandl to the editor, and experiments of M. Nasse have been appealed to on the subject. These experiments apparently show that a liquid condition of the blood is always to be expected when the poison has been absorbed. As M. Mandl remarks, this peculiar phenomenon in phosphorus poisoning may depend either on the phosphorus directly destroying the vitality of the blood, or by its acting indirectly through the nervous system.—*Gazette des Hôpitaux*, 19th April 1860.

POISONING WITH ATROPINE—INDICATIONS OF THE ALKALOID IN THE URINE.

Dr Roux (de Brignolles) was called on the 21st April 1860, at 9.30 A.M., to a lady thirty years of age, who, in a fit of despair, had designedly swallowed a solution of atropine, which had been prescribed by a distinguished oculist of Paris for the purpose of preventing the formation of adhesions of the iris. The formula of the prescription was as follows:—atropine, three grains; distilled water, ℈iv.; alcohol, ʒj.; dilute acetic acid, one drop. One part of this solution had been employed as directed, and Dr Roux calculated that at least three-fifths remained, representing nearly two grains of atropine. The patient was in bed. The face and conjunctivæ much injected, and the pupils so dilated that the iris was reduced to the size of a greyish thread. Sight was not completely lost, but objects were confused, and of a red colour, and the patient complained of being enveloped in a dense mist. She had nausea; and, by the aid of large quantities of tepid water, abundant vomiting was produced. Giddiness and tendency to sleep, scarcely controlled by fear of death and regret at her conduct; coldness of the extremities, which were also cramped; pulse 150, small and depressed. The treatment consisted in the giving of small cups of strong black coffee every quarter of an hour; the application of cooling lotions to the forehead, and of sinapisms to the extremities. The first doses of coffee were rejected by vomiting, and at eleven o'clock a quantity, of the ordinary strength, was given by the lower bowel. Shortly afterwards the nausea ceased, the patient became a little calmer, and the stomach retained some mouthfuls of coffee. At one o'clock, however, the delirium and agitation were extreme. She wished to rise, was evidently unconscious, and the mouth could only with difficulty be opened; but deglutition appeared easy: there was tenesmus; frequent desire to urinate; and the urine, which was carefully collected, was clear and transparent. Dr Roux recollecting that M. Bouchardat had recommended a solution of iodine in iodide of potassium as an antidote to belladonna, and as a precipitant of other alkaloids, determined to prescribe it alternately with the coffee. Unfortunately the lady was pregnant, and iodine is much feared by some as an abortive; but Dr Roux, nevertheless, prescribed the antidote, and gave, according to the formula, a cupful every half-hour: iodide of potassium, fifteen and a-half grains; iodine, two grains; distilled water, seventeen fluid ounces. The treatment was attended with the best effects; and at seven o'clock the use of the antidote was suspended, but the coffee was still given.

Next morning, 22d April, the patient rose. She was pale and sunk. She had only slept one hour, and since 4 A.M. had had two loose stools. The pupil was still much dilated, and vision was much confused, objects still being indistinct, and of a slightly reddish tinge; muscular debility considerable; pulse irregular, small, and still frequent.

The patient stated that the solution of atropine had a very acrid taste, and that, a quarter of an hour after having swallowed it, she was affected with nausea and ocular flashes. She lost all feeling in her legs and arms, and then she called for assistance.

Dr Roux was anxious to test the urine for atropine, and for this purpose availed himself of the test proposed by M. Bouchardat, and by which that chemist had determined the presence of various alkaloids, such as quinine, morphia, solanine, daturine, atropine, in the urine of animals fed on the poisonous solanaceæ. Drop by drop the following mixture was allowed to mix with the urine, viz.: iodine, fifteen and a-half grains; iodide of potassium, thirty-one grains; distilled water, two ounces. At first the urine became of a deepish green tint; and then, as an excess of the test, was added, a fine powder of a greenish yellow colour, and in very small quantity appeared at the bottom of the fluid. Two hours had elapsed since the urine had been collected, and Dr Roux fearing that possibly from the heat a little of the urea might have been transformed into carbonate of ammonia, a drop of muriatic acid was added, and a quarter of an hour after, there was a flocculent reddish yellow precipitate. Dr Roux finally mixed with some normal urine a solution containing one-fifth of a grain of atropine; when to this the iodine solution was added, the liquid became clouded, and of a greenish colour, and after a time a greenish yellow precipitate fell, as in the first experiment, but much more copious. These experiments led Dr Roux to conclude that this test of M. Bouchardat's is of such delicacy, that it may detect smaller quantities than even one-fifth of a grain of atropine in the urine.—*Gazette des Hôpitaux*, 31st May 1860.

SYMPTOMS OF POISONING FROM THE EXTERNAL USE OF TOBACCO.

The following case is quoted from a Sardinian Medical Journal:—

A young man affected with *Herpes Tonsurans*, which had resisted numerous remedies, was advised by a quack to treat it with the empyreumatic oil of tobacco. By means of a particular kind of pipe which he was in the habit of smoking with, he soon collected a considerable quantity of the oil, with which he commenced frictions on the arms, the seat of the disease.

About two hours after, he was seized with shiverings, cold sweats, and was nearly insensible. Diarrhœa, vomiting, and delirium now came on, and during the visit of the physician who was summoned, he swooned away. The young man had previously been robust and healthy, and to no other cause than poisoning by nicotine could the symptoms be referred. By the use of strong frictions and diffusible stimulants, he speedily recovered. The case is interesting, inasmuch as it shows the danger of using tobacco incautiously; and also, that should death result, the cause of death is not to be sought for alone in the contents of the digestive tube.—*Gazette des Hôpitaux*, 23d Sept. 1858.

Part Fourth.

MEDICAL NEWS.

QUESTIONS AT THE LAST EXAMINATION OF CANDIDATES FOR ARMY ASSISTANT-SURGEONCIES.

Anatomy and Physiology.—Mr Busk.

Monday, August 13, 1860.—10 *to* 1 *o'clock.*

1. Describe the general characters of the ribs, and the peculiarities by which certain ribs are distinguished. Enumerate the muscles engaged in their elevation and depression.

2. Give a description of the cœcum and the ilio colic valve; and state the difference in point of structure between the large and small intestines.

3. Describe, in the order in which they occur, the parts brought into view in exposing the anterior surface of the anterior scalenus muscle.

4. Describe the several parts brought into view in dissecting and removing the short muscles of the thumb and abductor indicis.

5. Give the physical and chemical characters of yellow elastic tissue, and notice the principal situations in which it exists in the human body.

6. Mention the circumstances which increase or diminish the amount of carbonic acid exhaled by animals.

Surgery.—Mr Paget.

Monday, August 13, 1860.—2 *to* 5 *o'clock.*

1. Enumerate not less than five kinds of wounds which you would not attempt to heal by the first intention; and state how you would treat each of them.

2. Describe the most frequent appearances, after death, of enlargement of the middle lobe of the prostate gland; and the symptoms by which that condition may be known, or suspected, during life.

3. Describe fully the proper treatment of a perineum recently and completely ruptured during parturition.

4. What are the conditions on which secondary hæmorrhages after amputation depend, and what are the best modes of treating them?

5. Write Latin prescriptions for the following medicines for hospital use, namely—colocynth and calomel pills; jalap, and calomel pills; compound senna draught; zinc lotion; hydrochloric acid gargle.

6. Describe the several forms of hydrocele connected with the testicle and spermatic cord, including those that occur in infancy, and mentioning particularly the characters of the fluids contained in them.

7. Describe the usual symptoms and progress of an ordinary case of cancer of the rectum. Under what circumstances, in the course of such a case, would you think it proper to open the colon?

Natural History, etc.—Dr Hooker.

Tuesday, August 14, 1860.—10 *to* 1 *o'clock.*

Answer five or more of the following questions:—

1. What is meant by the respiration of plants, and how is it effected?

2. Give the botanical characters of the Natural Orders Labiatæ, Valerianæ, and Solaneæ; and mention the medicinal plants they contain.
3. Contrast the reproductive systems in phanerogamous and cryptogamous plants.
4. By what characters are the orders of Dicotyledons grouped into four divisions, and of Monocotyledons into three?
5. What are the kind of aloes used in medicine, how are they distinguished, and where do they come from?
6. To what constituents are the nutritious properties of wheaten bread due? Give their chemical composition, and explain the changes they respectively undergo during the operation of mastication and digestion.
7. Describe the nature and products of acetous and vinous fermentations.
8. Give the dental formula and peculiarities of the alimentary canal in ruminants.
9. Describe the structure and mode of development of a bird's feather.
10. Indicate the parts of the alimentary canal in which the different intestinal entozoa are chiefly met with.
11. Give the chemical composition of sea water, and contrast hard and soft waters.
12. Define tersely the terms—etiolate, diluent, demulcent, viscid, plastic, elastic, dense, transparent, and translucent.

MEDICINE.—DR PARKES.

Tuesday, *August* 14, 1860.—2 *to* 5 *o'clock*.

1. What are the causes of anasarca? How is the effusion produced in each case, and how would you treat the principal forms?
2. Describe the appearances seen after death in the abdomen in the following diseases:—typhoid fever; phthisis, with intestinal complications; dysentery.
3. What are the physical signs of the following diseases?—1. Pleurisy on the right side, with great effusion. 2. Obsolete pleurisy on the left side, with great contraction. 3. Cancer, commencing in the mediastinum, and infiltrating the whole of the upper lobe of the right lung. 4. Extensive tuberculosis and cavities throughout the left lung. 5. Great enlargement of the bronchial glands in a child.
4. Describe the symptoms produced by the passage of a renal calculus. What is the composition of the principal calculi? How would you treat a case of presumed calculous pyelitis?
5. What are the chief diseases to be watched for in the first week after delivery? Give their symptoms and treatment.
6. What are the preparations of mercury in the Pharmacopœia? How would you test for mercury in a complex fluid? What are the chief symptoms and the measures to be adopted in chronic poisoning from mercury?

QUESTIONS AT THE LAST EXAMINATION OF ARMY ASSISTANT-SURGEONS BEFORE PROMOTION.

July 1860.

A.—MEDICINE.—DR PARKES.

1. Much discussion has taken place with regard to the etiology of yellow fever, and its exact relation to diseases of undoubted malarious origin. Describe the symptoms and treatment of yellow fever, and enter as fully as you can into the questions above alluded to.

2. What are the pulmonary diseases you have had to treat since your entrance into the service? Give their symptoms and treatment, and state any opinions you have formed from your own experience, with respect to their causes and the preventive measures which should be adopted.

3. What opinions are now generally received respecting the causes of scurvy? How does the scorbutic taint modify the symptoms of the following diseases:—Typhus, pneumonia, pleurisy, and dysentery.

4. What are the symptoms and causes of beri-beri?

5. What are the chief measures used for purifying water from suspended and dissolved organic substances? What diseases have been supposed to be produced or aggravated by the use of such impure water.

6. What is the ordinary diet of the soldier on home service? Your opinion being asked as to the kind and quantity of food which should be supplied in a campaign in Europe, expected to be extremely harassing and laborious, draw up such a scale of diet as will in your opinion meet the case.

B.—SURGERY.—MR PAGET.

1. Write such regulations for the general treatment of men nearly drowned as may be carried out by non-professional persons.

2. Describe briefly the characters and the appropriate treatment of burns of different degrees of severity.

3. Enumerate the contagious diseases of the skin (excluding the exanthematic); describe the distinctive characters and treatment of each. How would you try to prevent their spreading in a regiment?

4. Write lists of all that should be prepared for the performance of, and first dressings after, the operations of (1) amputation above the knee; (2) tracheotomy; (3) trephining.

5. What precautions do you observe in the administration of chloroform? In case of any untoward symptom arising during its administration, what should be done?

6. What are the most frequent conditions of the bones, and the parts around them, in old cases of ununited fracture?

7. What are the principal injuries and diseases of the head for which the removal of bone, by trephining or otherwise, should be generally advised.

C.—ANATOMY, PHYSIOLOGY, ETC.—MR BUSK.

1. Describe the diaphragm, its connections, relations, and function.

2. Describe the fasciæ of the abdomen, together with those of the pelvis and perineum in the male.

3. Give an account of the structure and properties, physical and vital, of a middle-sized artery, and of the capillary vessels.

4. What are the conditions upon which the rhythmical movements of the heart depend, and to what causes are its sounds due?

5. What are the chief active principles in opium? Describe in general terms the method of extracting them.

6. What are the wild British poisonous plants which give rise to the most frequent cases of accidental poisoning? What symptoms do they produce?

7. What is yeast? Give the rationale of its use in baking bread.

8. Enumerate the principal plants from which sugar is procured. Explain its use as an article of diet; and distinguish grape from cane sugar.

VARIETIES.

John Hunter.—The Council of the Royal College of Surgeons have caused a beautiful memorial tablet to be placed over the site of the grave of Hunter, whose remains now rest in Westminster Abbey, with the following inscription:—"Beneath are deposited the remains of John Hunter. Born at Long Calderwood, Lanarkshire, N.B., on the 13th February 1728; died in London on the 16th October 1793. His remains were removed from the church of St Martin's-in-the-Fields to this Abbey on the 28th March 1859. The Royal College of Surgeons of England have placed this tablet over the grave of Hunter to record their admiration of his genius as a gifted interpreter of the Divine power and wisdom at work in the laws of organic life, and their grateful veneration for his services to mankind as the founder of scientific surgery." This inscription is deeply cut in brass, of a Gothic design, inlaid in a slab of polished red granite. Mr Weekes is entrusted with the model of the statue, which is to be of marble, and to be placed in the Hunterian Museum.

Emphatic.—One of our medical cotemporaries makes the following emphatic appeal to its subscribers who are in arrears:—If you have not the money, send postage stamps, prairie chickens, old Bourbon, knit stockings, counterpanes, wolves' scalps, buffalo hides, sheep's pelts, coon skins, whale-leather, cast-off clothing—anything but your "best wishes for our success," unsustained by evidence.—*American Journal.*

The Torture of Criminals.—The *Enquirer* gives the following account of an arrangement at the Philadelphia County Prison, for the punishment of refractory prisoners, which, it is hoped, for humanity's sake, is an exaggeration:—The famous criminal bath was then exhibited. In a cell at the eastern end of the corridor appropriated for females, stood something like a wooden chimney vertically against the wall. Closer inspection revealed a door in its front with staple and padlock. This being thrown open, an apartment just large enough to contain a human body was revealed, with one of the round perforated bath-cisterns in the top. The door and sides are hollow and stuffed with woollen to prevent screams from being heard. When any prisoner becomes ungovernable, he is escorted to this cell. The physician, the nurse, and the superintendent stand by. The malefactor is forced into the apartment, the door closed upon him and the staple secured with a heavy padlock. Then in the darkness and stifling air, the unhappy criminal feels the rush of the descending water. It comes in a torrent upon his uncovered head, and seems to be beating upon his brain. In vain does he seek to avoid the draught. He cannot bend in the narrow aperture. He cannot turn. His breath grows short. Every nerve is unstrung. His heart beats agonizingly. He screams, but the walls are deaf and there is no reply. He is suffocating—dying. And when sense is swimming and life flickering, the door is opened, the unhappy man removed and the dying pulses taught to beat again. Sometimes the criminals, when removed, are black in the face, the blood flooding the head.—A man in Sing Sing prison lately expired under this punishment. The shower bath at Moyamensing has been used three times in seven years. Its effects are to shock the nervous system and weaken the entire body. One woman was lately put to the bath test.—*American Journal.*

Sir Benjamin Brodie on the Use and Abuse of Tobacco.—The opinions of this distinguished physiologist and surgeon on the keenly debated subject of the influences, sanitary and social, of tobacco smoking, have been expressed in the following interesting letter to the *Times:*—"Sir,—Having been applied to some time since to join in a petition to the House of Commons, that they would appoint a committee to inquire into the effects produced by the prevailing habit of tobacco smoking, I declined to do so; first, because it did not appear to me that such a committee would be very competent to discuss a question of this kind; and, secondly, because, even if they were so, I did not see that it would be possible for Parliament to follow up by any act of legislation the conclusions at which they might have arrived. Nevertheless, I am ready to admit that the subject is one of no trifling importance, and well worthy the serious consideration of any one who takes an interest in the present and future well-being of society. From these considerations it is that I now venture to address to you the following observations. The empyreumatic oil of tobacco is produced by distillation of that herb at a temperature above that of boiling water. One or two drops of this oil (according to the size of the animal) placed on the tongue will kill a cat in the course of a few minutes. A certain quantity of the oil must be always circulating in the blood of an habitual smoker, and we cannot suppose that the effects of it on the system can be merely negative. Still, I am not prepared to subscribe to the opinion of those who hold that, under all circumstances, and to however moderate an extent it be practised, the smoking of tobacco is prejudicial. The first effect of it is to soothe and tranquillize the nervous system. It allays the pains of hunger, and relieves the uneasy feelings produced by mental and bodily exhaustion. To the soldier who has passed the night in the trenches before a beleaguered town, with only a distant prospect of breakfast when the morning has arrived; to the sailor, contending with the elements in a storm; to the labourer, after a hard day's work; to the traveller in an uncultivated region, with an insufficient supply of food, the use of a cigar or a tobacco pipe may be not only a grateful indulgence, but really beneficial. But the occasional use of it under such circumstances is a very different matter from the habit of constant smoking which prevails in certain classes of society at the present day. The effects of this habit are, indeed, various, the difference depending on difference of constitution, and difference in the mode of life otherwise. But, from the best observations which I have been able to make on the subject, I am led to believe that there are very few who do not suffer harm from it, to a greater or less extent. The earliest symptoms are manifested in the derangement of the nervous system. A large proportion of habitual smokers are rendered lazy and listless, indisposed to bodily and incapable of much mental exertion. Others suffer from depression of the spirits, amounting to hypochondriasis, which smoking relieves for a time, though it aggravates the evil afterwards. Occasionally there is a general nervous excitability, which, though very much less in degree, partakes of the nature of the *delirium tremens* of drunkards. I have known many individuals to suffer from severe nervous pains, sometimes in one, sometimes in another part of the body. Almost the worst case of neuralgia that ever came under my observation was that of a gentleman who consulted the late Dr Bright and myself. The pains were universal, and never absent; but during the night they were especially intense, so as almost wholly to prevent sleep. Neither the patient himself nor his medical attendant had any doubts that the disease was to be attributed to his former habit of smoking, on the discontinuance of which he slowly and gradually recovered. An eminent surgeon, who has a great experience in ophthalmic diseases, believes that, in some instances, he has been able to trace blindness from amaurosis to excess in tobacco smoking; the connection of the two being pretty well established in one case by the fact that, on the practice being left off, the sight of the patient was gradually restored. It would be easy for me to refer to other symptoms indicating deficient power of the nervous system to which smokers are liable: but it is unnecessary for me to do so; and, indeed, there are some which I would rather leave them to imagine for themselves than undertake the description of them myself in writing. But the ill effects of tobacco are not confined to the nervous system. In many instances there is a loss of the healthy appetite for food, the imperfect state of the digestion being soon rendered manifest by the loss of flesh and the sallow countenance. It is difficult to say what other diseases may not follow the imperfect assimilation of food continued during a long period of time. So many causes are in operation in the human body which may tend in a greater or less degree to the production of organic changes in it, that it is only in some instances we can venture to pronounce as to the precise manner in which a disease that proves mortal has originated. From cases, however, which have fallen under my own observation, and from a consideration of all the circumstances, I cannot entertain a doubt that, if we could obtain accurate statistics on the subject, we should find that the value of life in inveterate smokers is considerably below the average. Nor is this opinion in any degree contradicted by the fact that there are individuals who, in spite of the inhalation of tobacco smoke, live to be old, and without any material derangement of the health ; analogous exceptions to the general rule being met with in the case of those who have indulged too freely in the use of spirituous and fermented liquors. In the early part of the present century, tobacco smoking was almost wholly confined to what are commonly called the lower grades of society. It was only every now and then that any one who wished to be considered as a gentleman was addicted to it. But since the war on the Spanish Peninsula, and the consequent substitution of the cigar for the tobacco-pipe, the case has been entirely altered. The greatest smokers at the present time are to be found, not among those who live by their bodily labour, but among those who are more advantageously situated, who have better opportunities of education, and of whom we have a right to expect that they should constitute the most intelligent and thoughtful members of the community. Nor is the practice confined to grown-up men. Boys, even at the best schools, get the habit of smoking, because they think it manly and fashionable to do so; not unfrequently because they have the example set them by their tutors, and partly because there is no friendly voice to warn them as to the special ill consequences to which it may give rise where the process of growth is not yet completed, and the organs are not yet fully developed. The foregoing observations relate to the habit of smoking as it exists among us at the present time. But a still graver question remains to be considered. What will be the result if this habit be continued by future generations? It is but too true that the sins of the fathers are visited upon their children and their children's children. We may here take warning from the fate of the Red Indians of America. An intelligent American physician gives the following explanation of the gradual extinction of this remarkable people :—One generation of them become addicted to the use of the fire-water. They have a degenerate and comparatively imbecile progeny, who indulge in the same vicious habit with their parents. Their progeny is still more degenerate, and after a very few generations the race ceases altogether. We may also take warning from the history of another nation, who some few centuries ago, while following the banners of Solyman the Magnificent, were the terror of Christendom, but who since then, having become more addicted to tobacco smoking than any of the European nations, are now the lazy and lethargic Turks, held in contempt by all civilised communities. In thus placing together the consequences of intemperance in the use of alcohol and that in the use of tobacco, I should be sorry to be misunderstood as regarding these two kinds of intemperance to be in an equal degree pernicious and degrading. The inveterate tobacco smoker may be stupid and lazy, and the habit to which he is addicted may gradually tend to shorten his life and deteriorate his offspring, but the dram-drinker is quarrelsome, mischievous, and often criminal. It is under the influence of gin that the burglar and the murderer become fitted for the task which they have undertaken. The best thing that can be said for dram-drinking is, that it induces disease, which carries the poor wretch prematurely to the grave, and rids the world of the nuisance. But, unfortunately, in this, as in many other cases, what is wanting in quality is made up in quantity. There are checks on one of these evil habits which there are not on the other. The dram-drinker, or, to use a more general term, the drunkard, is held to be a noxious animal. He is an outcast from all decent society, while there is no such exclusion for the most assiduous smoker. The comparison of the effects of tobacco with those of alcohol leads to the consideration of a much wider question than that with which I set out. In all ages of which we have any record, mankind have been in the habit of resorting to the use of certain vegetable productions, not as contributing to nourishment, but on account of their having some peculiar influence as stimulants or sedatives (or in some other way) on the nervous system. Tobacco, alcohol, the Indian hemp, the kava of the South Sea islanders, the Paraguay tea, coffee, and even tea, belong to this category. A disposition so universal may almost be regarded as an instinct, and there is sufficient reason to believe that, within certain limits, the indulgence of the instinct is useful. But we must not abuse our instincts. This is one of the most important rules which man, as a responsible being, both for his own sake and for that of others, is bound to observe. Even such moderate agents as tea and coffee, taken in excess, are prejudicial. How much more so are tobacco and alcohol, tending, as they do, not only to the degradation of the individual, but to that of future generations of our species? If tobacco smokers would limit themselves to the occasional indulgence of their appetite, they would do little harm either to themselves or others; but there is always danger that a sensual habit once begun may be carried to excess, and that danger is never so great as in the case of those who are not compelled by the necessities of their situation to be actively employed. For such persons the prudent course is to abstain from smoking altogether. Trusting that you and your readers will excuse me for having occupied so large a space in your columns,—I am, sir, your obedient servant,

"August 27. "B. C. Brodie."

PUBLICATIONS RECEIVED.

Bozeman—Application of the Button Suture to the Treatment of Varicose Dilatation of Veins. By N. Bozeman, M.D. New Orleans, 1860.

Bozeman — Urethro-Vaginal, Vesico-Vaginal, and Recto-Vaginal Fistules. By Nathan Bozeman, M.D. New Orleans, 1860.

Journal of the Royal Agricultural Society of England. Volume XXI. Part 1. London, 1860.

Morehead—Clinical Researches on Disease in India. By Charles Morehead, M.D., etc., etc. Second Edition. London, 1860.

Stearns—Palatine Fissure: its Remedy by Artificial Means Considered. By Chas. W. Stearns, M.D. New York, 1860.

Virchow—Cellular Pathology, as based upon Physiological and Pathological Histology. Translated by Frank Chance, B.A., M.A., Cantab. London, 1860.

Part First.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Report of Clinical Cases Treated during the Session 1859–60, in the Surgical Wards of the Royal Infirmary, under the care of* JAMES SPENCE, Esq., F.R.C.S.E., Lecturer on Clinical Surgery.

THE present Clinical Report is arranged on a somewhat different plan from that of last year. In that the remarks were principally directed to special cases of peculiar interest, which were given in detail, with remarks upon them; the synoptical part of the Report being kept distinct. In the present Report the nature of the cases treated has led me to consider them not so much in detail as individual cases, but as groups or classes, illustrating some principles of surgery; and hence I have arranged each class of injury or disease, together with the accompanying remarks, in the form of a distinct section.

The cases treated from 1st September 1859 till 1st September 1860 amount to considerably more than 600; and, consequently, it is only the more important that are included in the Report.

PART FIRST.

SECTION FIRST.—INJURIES OF HEAD.

Under this title are included cases of severe scalp wounds, concussion and compression, and fractures of cranium.

I. *Of Scalp Wounds, where the symptoms of concussion were not prominent.*

1. Anne G——d, æt. 48, was knocked down a flight of stairs, whereby the whole frontal bone was laid bare, and the flap, divided

into two equal portions, reflected over the face. Silver sutures were used to keep the parts *in situ* after the bleeding vessels were secured. The hair was cut short. Cold applications to head, and the patient kept on low diet. Afterwards, abscesses formed in both eyelids, and bare bone could be felt through the openings which were made to evacuate the pus. The parts, however, cicatrized without any exfoliation taking place, and no other untoward symptom occurred to delay the cure.

2. Jessie F——y, æt. 40, a fortnight before admission, fell from a height of three feet, and struck her forehead on a fender, causing two wounds, each an inch long, over the right eyebrow. The lower, over the orbital ridge, continued open; was painful; its edges pale and swollen, through which bare bone was felt. Slight giddiness was the only cerebral symptom. Rest, purgatives, and low diet, with local dressing of Zinc Lotion, produced a cure in three weeks.

3. William U——n, æt. 49, on the 17th January 1860, fell from a scaffold nine feet high; was picked up insensible, and brought to hospital. On admission, however, he had completely recovered consciousness; answered readily and intelligently. Pulse 72, of good strength. Pupils natural. On upper and back part of left parietal region two crescentic wounds, $1\frac{1}{2}$ inch long, were observed. Around these the hair was cut short, and cold cloths applied. Rest, with low diet and occasional doses of laxative medicines, formed the whole of the treatment, and on the 24th January 1860 he was dismissed cured.

4. Charles Y——g, æt. 25, was stabbed on the back of head in three places. Wounds varied in size from $1\frac{1}{2}$ to 3 inches. Rest, cold water dressing, with low diet, were the remedies employed. Cured.

5. Peter F——n, æt. 35. Incised wound, 2 inches long, over right eyebrow—closed by continued silken suture. On admission, eyebrow swollen and painful. Suture removed, and warm water dressing applied; afterwards, Zinc Lotion. Cured.

6. Peter R——y, æt. 9, fell down a stair, and received a wound 3 inches long on anterior part of head. This had been closely stitched with silk suture. On admission, two days after, the head and face were red and swollen; pulse 120; skin hot and dry; tongue foul. Stitches removed; hair cut short; warm water dressing to wound, while head and face were enveloped in cotton wadding. Purgatives, low diet, and rest were likewise used, and on the tenth day after admission he was dismissed cured.

7. Henry C——g, æt. 9, fell among some stones from a height of 12 feet, causing a wound near vertex, 4 inches long. Lips of wound brought together by two silver sutures, hair cut short, and cold to head. Patient was pale, cold, and trembling on admission but perfectly conscious. Pulse 80. Next day he became very feverish, complaining of pain in head. Stitches removed, purgatives

administered, and two leeches behind ear. Four days after admission, face was slightly erythematous. Cotton wadding applied, with the internal use of Tinct. Mur. Ferri. With rest, low diet, and occasional purgatives, the cure was completed on the twentieth day.

II. *Of Scalp Wounds, complicated with concussion.*

1. Wm. M——, æt. 33, fell from a height of 20 feet, and was immediately thereafter brought to the hospital. He was semi-conscious; answered curtly and incoherently when roused; breathing slow and laboured; pulse 40, full; pupils dilated, but tolerably sensitive. On the back part of head a superficial wound existed, beneath which a coagulum could be felt. The right eyelid was swollen and ecchymosed. Shortly after admission he vomited several times. The head was shaved, and cold applied; an enema was also administered. Under the repeated application of leeches, and bleeding at the arm, with the use of purgatives, the pulse rose to 54. On the fifth day the same symptoms returned, but readily yielded to the action of a blister. From this date till dismissed he was kept quiet in bed, on low diet, using occasional purgatives, and had no recurrence of bad symptoms.

2. Thomas B——e, æt. 28, was thrown from a horse. Two hours after, he was seen, and found to be in a state of semi-stupor. Pupils moderately active; skin pale; pulse 70, weak. On the evening of following day symptoms of strong reaction set in, which were moderated by the repeated application of leeches, and cold to the head, and the use of active purgatives. On the seventh day a blister was applied to nape of neck, and on the twelfth he left the house, cured.

3. James F——k, æt. 15, was thrown round and flung down by machinery. Besides much general bruising, he exhibited all the symptoms of slight concussion. Next day, patient complained of severe headache; muttered a good deal; pupils contracted and insensible; pulse 88, full. In addition to the cold applications already used, three leeches were placed behind each ear, and active purgatives administered, as well as an enema. On the twelfth day he left, cured.

4. Ed. G——y, æt. 26. Four days before admission, fell down some stairs. Since then he had been drowsy and restless at times, and suffered constantly from headache. Pupils contracted and fixed; pulse 56. Ordered aperient medicine and rest, with low diet; also cold applications to head. By this, partial relief was obtained, when a seton was introduced at the nape of neck, and on the seventeenth day he went out, cured.

5. James L——t, æt. 45, was brought in by the police on the 1st July 1860, in a state of unconsciousness; answered monosyllabically after loud questioning, or shaking; pupils dilated and sluggish; pulse 72, full. His breath smelt decidedly of alcohol. Over left mastoid process, and implicating the concha of left ear, an incised

wound existed, which bled pretty freely. On vertex, two large abrasions were noticed. Next day, symptoms of concussion more intense. Ordered purgatives and enemata, and four leeches behind each ear, with cold to the head, which was shaved. This afforded him much benefit, and headache and drowsiness only remained. On the 1st, a blister was applied, and on the 25th, patient was dismissed, at his own request.

6. D. M——l, æt. 45, fell from a height of one storey, and, besides other injuries, received a lacerated wound of scalp, on vertex, five inches long. He was very drunk on admission. Wound closed by four stitches, and cold applied to head. Next day reaction set in strongly. Ordered $\frac{1}{16}$ gr. Tart. Antim. every two hours, and also an enema. On the fourth day the stitches were removed, and warm water dressing used; matter was burrowing under scalp. On the fifth, face flushed; restless; during night slightly delirious. Abscess opened in scalp, and purgatives administered. On the twenty-first day he left, convalescent.

III. *Cases of Fracture of Skull, and those in which symptoms of Compression came on secondarily.*

1. Wm. G——g, æt. 8, was thrown violently against the corner of a chest, whereby a wound two inches long on anterior part of right parietal bone was produced. On admission, the wound bled freely, and from right ear and nostril there was considerable discharge of blood. The patient was pale, cold, and semi-conscious; pulse 108, very weak; pupils obedient to light. He was placed in bed. Hair cut short, cold dressings to head, and laxatives administered. On the second day a leech was applied behind the ear, to relieve headache. After this no bad symptom occurred, and on the eighteenth day he left, cured.

2. John G——n, æt. 39, while in a state of intoxication, fell down a flight of ten steps. He was quite insensible when admitted; bleeding from both ears (especially the right) and nostrils; breathing stertorous and slow. Pulse 60, weak; pupils contracted and fixed. Cold to head, and a dose of Croton Oil was administered. Next day, was semi-conscious, drowsy, and complained of severe headache; vomited violently. Ordered three leeches behind each ear. On fourth day, pain much less; pupils natural; quite deaf, and saw double with left eye; pulse 72. On the sixth day a blister was applied to nape of neck, with good effects. On the thirteenth day all the above bad symptoms returned, along with facial paralysis on right side; leeches and purgatives ordered. A seton was afterwards introduced, rest and low diet being constantly enjoined; and on the forty-seventh day he left, cured.

3. Christina S——n, æt. 36, on the 28th January 1860, was struck on the head by a quantity of hard lime and brick thrown from a house-top, three stories high. She was rendered insensible for some time, and lost a considerable quantity of blood from a wound, two

inches long, situate over middle of superior part of os frontis. Admitted, February 7, 1860. Patient staggers as she walks; is dull and listless; complains of severe pain around wound, the edges of which are pale brown and everted; nearly two inches of frontal bone can be felt bare. Has had repeated rigors since third day of the accident; vomits continually; pupils dilated and sluggish; pulse 60. Ordered aperients, and blister behind ear. No improvement following this treatment, Mr Spence trephined at the seat of the injury. No matter was found, but, immediately after the operation, the pulse rose to 66, and vomiting only occurred once, while the rigors never returned. Headache continuing, a seton was introduced; and on the 24th April 1860 the patient left, cured.

4. James B——r, æt. 28, fell on the 28th April 1860, and was admitted into the hospital 7th May 1860. Over occiput, a scalp wound existed, whose edges were swollen, puffy, pale brown, and everted. The bone was entirely denuded of periosteum. He had headache, dimness of vision, and singing noises in the ears. Ordered rest, low diet, purgatives, and leeches. On the 13th an abscess below the wound was opened. On the evening of the 18th he was seized with rigors and vomiting. A blister applied to nape of neck, head to be shaved, and mustard cataplasms to epigastrium. The rigors and vomiting, with high pulse and occipital pain, continued unabated until the 19th, when delirium, and then coma, set in. Patient died on the 22d, at noon. His friends would not allow trephining to be performed.

Post-mortem.—May 24th. Membranes generally adherent. Beneath necrosed occiput a quantity of purulent matter was found. Dura mater at same place sloughing, but entire. From occiput, a fissured fracture extended upwards, forwards, and downwards, terminating at the post clinoid process. No pus was found between the membranes and brain, nor in the brain substance itself.

5. Wm. W——r, æt. 21, fell from the third storey of a house, and was soon after brought to the hospital insensible, bleeding from nose and ears, more particularly from right, through which masses of brain substance oozed out. He died about an hour after admission.

Post-mortem disclosed extensive fracture of base.

6. J. S——r, æt. 4, was crushed under a coping-stone. When brought to hospital she was unconscious, bleeding from left ear and nostril, conjunctivæ ecchymotic, breathing hurried and difficult. Hair was cut short, cold applied, and enemata and purgatives administered. Under this treatment she regained consciousness on the third day, and left perfectly well on the fourteenth.

Remarks on the Cases recorded under Injuries of the Head.—Although each of the three forms of injury, which have been grouped under this general title, possesses its own distinctive peculiarities, demanding attention in treating them, they have one feature in common, and that which gives them their greatest importance, viz., the effect they produce primarily or secondarily on the brain or its membranes. It is from this point of view I intend principally to consider the cases in this department of the Report, as several of them serve well to illustrate the symptomatology and indications for treatment of some of the effects of head injuries, and more especially of one of the more insidious forms. In the cases reported, even in those of fracture, it will be noticed that complete compression as a primary condition was very rare,—more commonly, concussion or a severer form of it verging on compression, so that the secondary dangers of concussion were those to be guarded against or treated.

The first of these dangers, extravasation of blood leading to compression, occurs in two very different forms. The course and nature of the symptoms of the form most generally described, are so marked as to arrest the attention even of a careless observer. After the insensibility of concussion has passed off, reaction been established, and the patient for a time restored to consciousness, he again becomes drowsy, and gradually lapses into a state of complete coma, with slow laboured pulse, stertorous breathing, dilated pupils, etc., rendering the nature of the case unmistakeable. But this series of events is by no means the most frequent, and the cases in the Report present no instance of it. There is, however, another and more insidious form of passive extravasation, which several of the cases serve to illustrate. Unless we are on the watch, there is nothing in the appearance of the patient which would excite alarm. Generally, he seems to be suffering little from the injury; complains, perhaps, of occasional headache, followed by a dull, uneasy sensation; but, if we examine carefully, we find that the pulse either never rises to the natural standard after the first stage of concussion has passed off, or what is more common, after having regained its natural frequency, or at first been frequent after reaction, it then begins to fall below the natural standard to 60, 52, or 40 beats per minute; this decrease following in a marked manner the occasional attacks of headache. The pupils are rather dilated, and if tested by the application of the light of a taper, contract in a sluggish and irregular manner. If these conditions be unnoticed or neglected, the patient, after the lapse of some days, may gradually become comatose; or, more generally, excitement, delirium, squinting, and convulsions precede by a few hours the symptoms of compression, which close the scene. In none of the cases in the Report did these fatal results take place, although in many of them, more especially in those of M——n, G——y, B——e, and G——n, the low oppressed pulse and other premonitory symptoms manifested themselves; but these indications being watched for, were promptly met by active treatment, and thus bad consequences prevented. The great danger in these cases is, as I have already said, that, owing to the slight general symptoms and the trifling alterations in the state of the pulse in the early stages, the surgeon may neglect to guard against subsequent reaction, with its accompanying extravasation. From what I have seen in the *post-mortem* examinations of cases in which the progress was such as I have described, I believe that the symptoms are due to a passive form of extravasation occurring at different times. Perhaps a certain amount of blood may have been poured out at the time of the accident, or slowly as the shock passed off, causing a slighter form of compression, as indicated by the somewhat dilated and sluggish pupil and the slow oppressed pulse. If no more extravasation occur, the symptoms may pass off without further bad effects; but if the patient, feeling not very ill, be excited in any way, or allowed to move about, attacks of headache ensue. Each attack, attended by falling of the pulse, greater dilatation and sluggishness of the pupil, marks the further effusion of blood. Next, the clot so increased in bulk, may, by its presence, excite irritation of the brain and its membranes; and then we have the delirium and squinting without apparent excitement of the pulse; but soon, as the escape of blood becomes more rapid from the restlessly excited state of the patient, sudden convulsion followed by complete compression results. In one fatal case, where the original injury was stated to be very slight, and where the patient could scarcely be made to see the necessity for any treatment, death occurred on the fifteenth day after the injury, preceded by excitement suddenly terminating in compression. On examination I found an enormous amount of blood effused, the greater portion of the mass being quite soft and evidently recent; whilst other portions, varying in consistence, showed that the extravasation had occurred at different times. Connecting these *post-mortem* appearances with the train of symptoms observed in such cases, I have long considered the slow oppressed pulse and sluggish pupil (especially when preceded by fits of headache, and the sensation described by patients, like a "rushing sound or feeling in the head") as indications for diminishing the force of the cerebral circulation so as to prevent further extravasation. The means I use to fulfil this indication are, depletion by means of leeches applied to the mastoid region; venesection in severe cases, or where the patient is young and strong; cold applications to the head, and free purgation. In a great many cases, if leeches be applied to the mastoid region, where the pulse is first noticed becoming slow, after reaction has been established, they will be found sufficient, if combined with cold to the head and the use of purgatives; but if the symptoms threaten to recur, the leeching should be repeated. In severe cases I have found most decided benefit from venesection, in alleviating the dull headache and tendency to coma, at the same time relieving the cerebral oppression, as evidenced by the slow, laboured pulse soon becoming more normal, and by the rapid improvement of all the other symptoms. In young and robust persons I have repeated the bleeding with advantage; but even in those of more advanced age or weaker constitution, it may be practised with perfect safety, if we carefully watch its effects, seeing that we can arrest the depletion when we please.

If antimony could be employed without the risk of inducing vomiting, it would be serviceable in preventing reaction after depletion; but unfortunately, even in minute doses, it is so uncertain in this respect, that I seldom have recourse to it.

At a more remote period after the injury has been received from the fifteenth to the twentieth day, or later—a similar train of symptoms, though less marked, sets in, depending, I believe, upon serous effusion from subacute or chronic congestion of the vessels of the membranes. In those cases, blisters to the nape of the neck or occipital region, combined with the use of mercurials and laxatives, will generally be found the most efficacious plan of treatment; but even at this stage I have occasionally had recourse to leeches with great benefit.

Of that class of cases in which the symptoms seem to depend on suppuration within the cranium, the present Report affords two instances, viz., those of James B——r and Christina S——n. Both patients were admitted into hospital about ten days after the infliction of the injury. In the case of B——r, though the dangerous symptoms were somewhat slower in manifesting themselves, yet the unhealthy state of the scalp-wound, and the denuded bone, in conjunction with headaches, etc., gave rise to an unfavourable prognosis; and when the more urgent symptoms supervened, combined with the formation of a boggy swelling which, when opened, exposed a further portion of bare bone, I felt no hesitation in recommending trephining. This, however, was not permitted, and the patient died comatose. From the *post-mortem* appearances, I still think that the operation was advisable, as affording a chance of relief. The existence of the fissure of the base could not be determined during life; and, moreover, as it was attended with no displacement, and as the only place where the dura mater was diseased was at the point corresponding to the puffy swelling and necrosed bone, I cannot consider such fissure as in itself a contra indication, especially if we view it in connection with the successful result of some other cases of severe fracture at the base which are to be found in the Report.

The case of Christina S——n illustrates the difficulty of diagnosis in this class of cases. Before her admission, on the tenth day after the injury, she had had repeated rigors, intense headache, want of sleep, and vomiting, together with imperfect power of controlling the movements of her limbs. Notwithstanding remedial measures, the bad symptoms increased; the pain became intense, and, at the same time, a kind of semi-consciousness as to surrounding objects developed itself, the wound of the scalp was unhealthy, a piece of dry bare bone was exposed, and limited facial paralysis supervened. Under these circumstances, in consultation with my colleagues, it was considered that, to delay the operation of trepan, would be to deprive the patient of any chance of recovery. The operation was accordingly performed, but no pus was found; yet from the day of the operation the vomiting ceased, and the patient progressed slowly but uninterruptedly to recovery. This case, I think, is instructive, as illustrative not only of the difficulty in arriving at certainty of diagnosis in such cases, but also as showing that, under such circumstances, if we do not find purulent matter, we do not add to the patient's danger by removing the portion of dead or dying bone. Nay, I cannot help thinking that the removal of that source of irritation, and the direct depletion and relief of tension, proved the means of saving this patient, judging from the progress of the symptoms prior and subsequent to the operation.

But whilst I think that such urgent symptoms, in connection with the unhealthy state of the wound and dead bone, fully warrant the operation, yet we must not forget that, in the case of an open scalp wound, there are greater sources of fallacy as to diagnosis than where we have the formation of the boggy, puffy tumour contemporaneously with, or closely following upon the cerebral symptoms. In the latter, the probabilities of such swelling corresponding to unhealthy conditions of the dura mater and bone secondarily affecting the scalp amount almost to a certainty; whereas in the former, the unhealthy state of the scalp wound may depend upon a mere superficial necrosis of the denuded bone; and the cerebral symptoms may be not directly connected but merely coincident with this.

I have already dwelt at such length on the foregoing points in reference to injuries of the head, that I can merely advert to the successful results of some of the severe fractures of the base of the skull, as showing that we should not despair even of such cases; for, by carefully watching symptoms and applying proper remedial measures, we may assist nature in the curative process. I would specially notice, as an example of this, the case of G——n, in which there was evidence of extensive fracture, with great bleeding from both ears and nose, injury of ethmoid, and subsequent fœtid discharge from that region. The most remarkable recovery, however, of fracture of the cranium was that of the child whose head was fairly crushed by a large cope-stone (so heavy as to require two men to lift it from off the child). When brought into hospital, her head seemed flattened; the cranial bones felt loose, as if broken up; and the eyeballs protruded. The child was completely insensible from compression, and remained so for nearly three days. At first, recovery seemed almost impossible; and the treatment was necessarily limited to the application of sinapisms to the epigastrium and feet, cold cloths to the head, and enemata; yet, when she once began to rally, she recovered rapidly, and wonderfully little deformity of the head remained. On leaving the hospital she seemed quite lively and intelligent.

SECTION SECOND.—FRACTURES.

Subjoined is a tabular view of the cases of fracture (in all 47) treated in the house, stating the seat of fracture and the result. The more important cases are shortly detailed :—

		Cured.	Died.
Of Vertebræ,	3	2	1
Of Ribs,	5	4	1
Of Pelvis,	2	...	2
Of Femur,	10.—Three through shaft, cured. In one case, refracture immediately above the former fracture, on third day after dismissal. One through trochanter, cured. Three through neck, relieved; and one through condyles into knee, cured.		

Of Leg, 21			Cured.	Under Treatment.	Died.
Simple fracture of tibia and fibula,	7	...	7	...	...
Compound do. do.,	5	...	2	1	2
Comminuted do. do.,	1	...	1	...	...
Tibia, alone,	4	...	4	...	...
Fibula,	4	...	4	...	...

Of Humerus, 4
Simple, but complicated with general bruising,—1 cured.
Comminuted,—1 cured.
Ununited,—1 under treatment and 1 cured.
Of Radius and Ulna,—1 compound and comminuted; cured.
Of Upper Jaw,—1 comminuted; cured.
Of Lower Jaw,—1 simple; cured.

1. Patrick B——s, æt. 40, was doubled up and crushed by the weight of a horse falling on him, by which several dorsal vertebræ were fractured. Along with complete paraplegia, a low form of peritonitis set in, and he died on the fourth day.

2. John S——s, æt. 26, a strong, muscular man, fell backwards over a rail seven feet high. Complete insensibility immediately followed the accident; but on admission, an hour afterwards, consciousness was partially restored, with, however, all the symptoms of paraplegia, and involuntary emission of semen, urine, and fæces. A fracture was discovered at the sixth cervical vertebra. The head and neck were bandaged to a pillow, and the patient placed in bed. He gradually recovered the power of voluntary movement, and sensation was complete. On the twenty-fifth day he went out, and, two weeks after, resumed his employment as a brewer.

3. Peter K——r, æt. 38, during the delirium accompanying erysipelas of the head, jumped from the third storey of a house, whereby he sustained a fracture about the middle of the dorsal vertebræ. For the first ten days he had all the symptoms of paraplegia, requiring the constant use of the catheter. Urine phosphatic. Ordered Nitric Acid. As the bowels continued constipated, Ext. Nuc. Vomic., gr. 1, with Ext. Coloc., was administered thrice a-day. On the sixteenth day he passed his water without the use of an instrument. After this, his appetite and strength gradually improved, and he only suffered from pain over seat of injury, for which a seton was intro-

duced, with benefit. Three months and a half after the accident occurred he walked perfectly, and still continues well.

4. Alex. C——n, æt. 24, fell before a railway waggon, which passed over his leg, occasioning a compound comminuted fracture. As the external wounds were small, and the main vessels entire, the limb was placed on a M'Intyre splint, and subsequently on a wire one. Abscesses formed, but no necrosis took place. After a time, starch bandage was used, and a good cure accomplished.

5. Patrick R——n, æt. 35, sustained a fracture of fibula, to which poultices were applied constantly for one month prior to admission. Abscesses formed around ankle-joint and foot, which were freely opened, and the limb placed on a leather splint. He recovered without any necrosis occurring.

6. Francis P——n, æt. 35. Leg crushed by wheels of railway carriages, causing severe compound comminuted fracture at lower third. Leg amputated two inches below tuberosity of tibia, by long posterior flap. Rigors on third day, followed by sloughing of edges of flaps, especially upper, laying bare the bone, which afterwards necrosed slightly. Ultimately, a good stump formed. Cured.

7. Duncan C——, æt. 43, of dissipated habits, fell from a height of thirteen feet, and suffered a severe compound comminuted fracture of right leg and simple fracture of left fibula. Amputation at upper third, by long posterior flap. On the second day pulse rose to 134, and on the fourth all the symptoms of pyæmia set in; on the fifth, sloughing of flaps appeared, with great prostration of system. Death on seventh day.

8. Walter H——t, æt. 26. Railway accident,—compound comminuted fracture of leg at middle, accompanied with longitudinal splintering of tibia and great laceration of soft parts. Amputation at lower end of femur, by long anterior flap of skin taken from surface over knee. Slight after-bleeding in the evening. Everything went on well until the thirteenth day, when he complained of abdominal pain, followed shortly afterwards by rigors and jaundice. Pyæmia gradually manifested itself more decidedly but slowly, and patient died on the twenty-fourth day, slight necrosis of the end of the bone having been made out a few days before.

Remarks on the Cases of Fracture.—The fractures of the vertebræ furnish us with two instances of successful results out of the three cases recorded. As a general rule, such success is unusual. The size of the spinal cord, and the nature of the osseous canal through which it passes, render it almost impossible that fracture attended with any displacement can occur without such compression or injury of the cord as must lead, either primarily or secondarily, to interruption of its function, and consequent paralysis of the parts below the injury. Fractures, with displacement, occurring in the cervical region, may, especially from the vital functions interrupted, be regarded as almost certainly fatal; yet, in the case of S——, we have an instance of such a lesion, with considerable displacement, terminating successfully. Judging from the train of symptoms observed, although the displacement and crepitus on movement, left no doubt as to the nature of the injury, it nevertheless seems pretty clear, that the medulla spinalis must have escaped direct lesion ; for the complete paralysis and other symptoms, at first urgent, gradually passed off, so that after some hours all the formidable symptoms had disappeared, and in a few days the patient felt so little uneasiness or inconvenience, that it was difficult to make him believe the serious nature of his injury, or get him to keep quiet in bed, and avoid moving his head. It is probable, therefore, that the original urgent symptoms were due either to severe concussion of the cord, or perhaps to a certain amount of direct compression without laceration, the compression being relieved when the patient was placed in bed, with the head supported. For my own part, I incline to the former view, and for this, among other reasons, that there never seemed to be any apparent alteration of the displaced bones, the shortening and bulging forward of the front of the neck, and the irregular depression and prominence felt posteriorly, being as marked, after the bad symptoms had passed off, as they were before. The interest of this case, however, does not terminate with the cure of the primary injury, for, contrary to my wish, he left the hospital on the twenty-fifth day after the accident, saying he felt quite well, and would be very careful of himself at home. I subsequently heard he had returned to his work, and on the 11th of March he applied to be re-admitted, on account of gradually increasing paralysis, which had rather suddenly supervened a few days before. The quick pulse and febrile condition of the patient, together with the difficult respiration and the paralysis affecting parts deriving their nervous supply from above the original seat of injury, led me to infer that secondary changes, the result of irritation and inflammation of the cord and its membranes, were taking place, if, indeed, softening had not actually occurred, and gave me a most unfavourable opinion of the case. Under treatment, however, the bad symptoms again gradually disappeared, and he was finally dismissed cured.

The case, independent of other points of interest, is instructive, as encouraging to careful treatment, even in cases all but hopeless, and as showing the necessity for enforcing absolute and prolonged rest and treatment, although the patient or his friends may consider all danger as past.

In regard to the fractures of the extremities, I would only remark, that the list recorded affords but a very imperfect idea of the number of fractures actually treated, because, except in special circumstances, cases of fractures of the upper extremity are not admitted into the hospital, but are treated as out-patients, and hence, though they come to the hospital, and form subjects of clinical instruction, no regular records are kept of them.

As to the plans of treatment adopted in the simple fractures of the lower extremities which are mentioned, I have not thought it necessary to detail them. I may, however, state them here generally. In cases of fracture of the shaft of the femur, I employ the long splint, together with two short splints, fixed with slip knots on each side of the broken bone, to prevent any lateral displacement. In fractures of the neck of the femur, the long splint, without the lateral support, is used; but in many cases of old infirm persons, in whom the use of the splint cannot be continued, I have recourse to the following plan.—A long narrow pillow or pad is placed between the legs, extending from above the knee to below the ankle, and the injured limb is secured to the sound one, by bandages at the knees and ankles, a broad flannel spica bandage being applied round the pelvis, and over the upper part of the injured thigh, so as to fix the thigh and pelvis. I prefer this plan to the double incline of pillows, as it not only ensures greater fixity and extension, but also enables us to place the patient occasionally on the sound side, and so diminish the risk of bed-sores forming on the back. In cases where, from extensive bruising of the body or limb on the injured side, or other causes preventing the use of the splint, and where, at the same time, full extension is desirable, I apply the long splint on the sound limb, and then keep the injured limb fully extended, by fastening it to the sound one thus fixed.

In cases of simple fracture of the bones of the leg, I find the simplest and most satisfactory plan is the use of two lateral pasteboard splints with foot-pieces, moulded to the limb, secured by slip knots, the limb being laid on the outer side, and flexed to a greater or less degree, according to the nature of the fracture. In cases of very oblique comminuted or compound fractures, or in cases of fracture of the tibia very high up, the use of Liston's splint, properly padded and adjusted, is the treatment I resort to. In fractures near the malleoli, attended with splitting of the lower part of the tibia, or separation of that bone from the fibula, in which the heel and foot are retracted, and the bones of the leg projected, and where the tendency to retraction, recurring after coaptation, is considerable, the stirrup splint well padded and placed on the front of the leg (used either alone or combined with narrow lateral splints), affords a fixed point to which we can bring forward the heel by bandaging, whilst, at the same time, it presses upon the bones of the leg, and prevents them projecting forwards. In cases of Pott's fracture of the fibula above the malleolus, attended with eversion and twisting of the foot, Dupuytren's splint, applied along the tibial side of the leg, is used as a fulcrum over which the foot is kept inverted, whilst, at the same time, slight extension is preserved. For some cases attended with retraction of the foot as well as eversion, the stirrup splint may be used with advantage, the inner horn of the stirrup being made the fulcrum over which the foot is kept inverted, whilst retraction is obviated by bandaging the heel forwards to the splint. Of course, in the corresponding fracture of the malleolar part of the tibia, with inversion, the Dupuytren splint is applied on the fibular side, to keep the foot everted. With exceptional instances, I have always employed these simple methods, so long and successfully used in this hospital; and after very extensive experience in treating fractures in Hospital, Dispensary, and private practice, I see no reason for changing to other methods, which certainly could not afford me better results, and which seem to me attended with some risk, from which these ordinary plans are free. I allude, particularly, to the use of the starch bandage, and the plaster of Paris methods of treatment, which are now much used on the Continent. In regard to the starch bandage applied after the lapse of some weeks, when all risk of swelling, or other results of the local irritation produced by the accident have passed away, and, as a means of abridging the period of the patient's confinement, I not only have no objections to it, but have recourse to it very generally. But, used from the very first, I think it objectionable, as preventing the surgeon from observing the state of the limb, and guarding against mischief. The advantage which some claim for it, that the patient may walk about with a crutch in a day or two after the injury, I look upon as no advantage, but on the contrary, I think the patient would be then much better in his bed, even supposing he felt the inclination to walk about. The plaster of Paris method, of course, has all the disadvantages of hiding the fractured limb from the surgeon's view, and, if I may judge from personal experience, when working with that material in taking casts, it must be anything but pleasant to the feelings of the patient, when it contracts in setting. I have seen a considerable number of cases of fracture of the leg put up in this manner in Germany, and I can easily understand that many such cases do well enough; but it is quite as likely that, in many cases, the mass of stucco in which the fractured limb is embedded, may be, very literally, a whited sepulchre. In a word, I think when we possess well-tried, simple, and successful plans of treatment, we should be very chary in departing from them. Novelty is not always progress, and, unfortunately, many novelties in surgery at the present day seem to consist in departure from simplicity of treatment.

SECTION THIRD.—WOUNDS.

From a numerous list of cases of this class, the following are selected as the most important or instructive:—

1. Charles M——r, æt. 13. Wound at base of middle and ring fingers, causing gangrene. Amputation. Cured.

2. John S——n, æt. 38. Thumb nearly torn from hand by bursting of a gun. Skin presented the appearance of an incised wound; bones and muscles blackened and destroyed. Amputation. Cured.

3. James G——n, æt. 14. Lacerated and contused wound of hand, caused by the bursting of a pistol, part of which had gone through

first and second metacarpal bones, fracturing these, and destroying soft parts entirely. Amputation of whole of thumb and forefinger, except head of metacarpal bone, which was uninjured. Cured.

4. Walter W——n, æt. 35, while working in a pit, suffered a severely lacerated wound of thigh by the bursting of a large powder-flask which he held in his hand. The skin was stripped off the upper part of thigh, on its inner and anterior surfaces, for about 7 inches square; the muscles torn and charred; the common femoral was bared, and seen pulsating for several inches of its course. Mr Spence performed amputation at the hip-joint, first tying, however, the common femoral where exposed, and taking one large flap from the outer and back aspects of the hip. Patient, besides having lost a good deal of blood, was much exhausted by a long journey by railway. Opiates and stimulants were administered, but he sank on the morning of the second day. No bleeding occurred after the stump was dressed.

5. Michael L——n, æt. 38, with enormously large spleen and the other signs and symptoms of leukæmia, had a small abscess in the leg opened. Wound continued to bleed for four days; arrested by a compress; afterwards sent to Medical wards.

6. Thomas M——e, æt. 21, by an unfortunate stroke of his sickle, nearly divided the left tendo achillis. He was afterwards sent to hospital, and had the foot retained in the slipper apparatus until union took place.

7. George N——t, æt. 41, was stabbed in the lower part of abdomen with a clasp knife, producing a wound half an inch long, situated in the left lumbar region, close above the iliac crest, and two inches posterior to the anterior superior process. Bleeding *per saltum*, and very copiously. One artery ligatured; its other extremity, which could not be secured, was closed by pressure. Patient faint; anxious expression; pulse 120, feeble. Ordered wine and opiates. No peritonitis ensued, and the patient made a good recovery.

8. James C——x, æt. 38, received a penetrating wound of abdomen, situated a little to the left of the mesial line, commencing just above pubes, and extending upwards for about two inches. From this opening a considerable portion (about 12 inches) of small intestine protruded. This could not be returned until Mr Spence enlarged the wound in the peritoneum, which, at first, would only admit of the point of little finger being introduced. The right epigastric artery, which lay close upon the track of the original cut, was tied above and below, and the lips of the wound being now secured by stitches, a pad and bandage were applied. There were other wounds besides this on various parts of patient's person, all inflicted with a clasp knife. Patient was pale, faint, and anxious; pulse 88, feeble. Ordered wine and opiates. There was no injury to bladder. At the end of 24 hours peritonitis set in, and he died about 48 hours after admission.

9. Cunningham G——t, æt. 17, fell from a ladder 40 feet high, and was impaled on the spikes of a railing. On admission, a large

penetrating wound of the lower part of thorax, on the right side, was found close to the vertebræ. Fracture of several ribs could be made out on same side, but not very exactly. Dark-coloured blood flowed freely from the wound, mixed with bubbles of air. He was placed in bed on his right side, in order to favour the exit of the blood. The amount of shock was great. Bleeding ceased eight hours after admission. Both sides of chest continued resonant until 40 hours after reception of accident, when he sank.

Post-mortem. Extensive pleural adhesions on both sides; in right sac about 10℥. of grumous serum. At angles of ninth and tenth ribs, a lacerated wound, two inches long, from above downwards, filled with torn muscular texture and clot. Ninth and seventh ribs broken at angles; the head of former also dislocated forwards. At the upper and back part of lower lobe, the lung texture was slightly lacerated for about an inch, the surface being covered with small clots plugging up the larger wounded vessels. Both lungs were congested, but perfectly crepitant.

10. George L——e, æt. 19, received a severe wound with a cork-cutter's knife, dividing the tendons of the supinator longus and extensors of the thumb, etc., the radial and superficial volar arteries, and penetrating deeply through the epiphysis of the radius into the joint. Vessels were tied at both extremities; the skin brought together by silver sutures, and the limb laid on its inner side, resting on a leather splint, to which it was bandaged. Cured.

Remarks on the Cases of Wounds.—Amongst the selected cases of wounds mentioned in the report, there are four—viz., the cases of W——n, C——x, G——, and L——e—which are specially worthy of notice, on account of their nature and severity.

In W——'s case the injury was inflicted by the ignition and explosion of a large iron flask of gunpowder (probably one of those iron flasks or bottles used for holding mercury), the thickness of iron being about ¼ of an inch. The wound, therefore, was exactly similar to those caused by the bursting of shells; and the flask being in close contact with the body, the effects were most intensely destructive. The thigh seemed almost separated at the inner and upper part. The femoral artery, largely exposed and isolated for some extent, had, strangely enough, escaped being divided. The vein, however, seemed to have suffered from twisting, as the blood was coagulated in it; the pectineus, adductors, and the hamstring muscles at their origin from the tuber ischii, were divided and torn into shreds, whilst the front of the abdomen and lower part of the thorax were scorched by the explosion. Stimulants and opiates had been given to relieve the state of shock; but as I found, on examination, that blood was being lost from the divided branches of the profunda oozing into the tissues, and that the patient would sink instead of rally, I determined to amputate at the hip-joint, as affording the only chance, and performed the operation, assisted by my colleagues, Professor Miller and Dr Watson. The patient rallied somewhat next morning, but gangrene attacked the edges of the wound, and he gradually sank.

The chance afforded, under such circumstances, by amputation at the hip-joint, is, of course, very small; but, as it seems to me, there is no alternative, unless we are to look on and see the patient writhing in agony, and bleeding to death. And the operation performed under chloroform at least diminished his suffering, by removing the lacerated limb.

The case of C——x is an example of a penetrating wound of the abdomen inflicted with a sharp cutting instrument, and complicated with intestinal protrusion, under circumstances which rendered it a very aggravated form of that injury, and instructive as exemplifying all the points to be attended to in the treatment of abdominal wounds. As the patient had crawled for some little distance along the ground after being wounded, the coil of small intestine which had protruded was covered with blood, and had suffered from exposure to cold. His pulse was small, quick, and irregular,—partly from loss of blood, and also from the pain and nausea induced by the hernial protrusion; and there were great restlessness, jactitation, and abdominal pain. As the bleeding had ceased before I saw him, it was evident that the protrusion was the first thing to be attended to. The blood having been washed away by pouring a stream of tepid water over the intestine, I next carefully examined every part of it, and the mesentery connected with it, lest there should be any wound of the gut or blood-vessels, before I attempted reduction. Having satisfied myself on these points, I proceeded to examine the wound and the relations of the neck of the protrusion. On doing this, I was somewhat surprised to find two wounds in the muscular parietes, one lower down than the wound in the integuments, and about an inch nearer the mesial line than that through which the intestine protruded, and smaller in size. On reflection on this feature in the case, I think it probable that the knife had not penetrated directly backwards, but must have passed in a somewhat horizontal direction, and so have transfixed the muscular parietes,—the shortness of the weapon possibly preventing it reaching the integuments to wound them a second time. I found that the opening, through which the hernia protruded, was very tightly constricted at its neck; and I accordingly proceeded to enlarge it with a probe-pointed bistoury. This required more caution than in an ordinary case of hernia, as it was difficult to determine accurately the position of the opening in reference to the epigastric artery; but, cutting directly upwards for a few lines, I got the point of my finger introduced so as to feel my way, then divided the parietes more freely in the same direction, and reduced the protrusion. I would strongly inculcate the necessity for care in dividing the constriction in similar cases; for, after reducing the bowel, I felt the epigastric artery lying close along the edge of the wound, and quite bare for nearly three-fourths of an inch. This was another feature in the case to be considered. Taking into account that there had been considerable bleeding from the abdominal wound, and the probability that this exposed portion of the vessel had been injured, and might, after reaction, lead to internal hæmorrhage, I thus secured it. Drawing it outwards with a small blunt hook, I passed a ligature by means of an aneurism needle, divided the loop of the thread, drew one portion of it upwards and the other downwards, as far as the vessel was exposed, and tied them, so preventing all risk of bleeding. I then closed the wound carefully with silver sutures, supported by a flat compress of lint, to prevent any further tendency to protrusion. For a short time no bad symptoms appeared, and he rallied somewhat; but intense peritonitis supervened, and this, with the previous loss of blood, speedily proved fatal.

In the case of G——t, we have an extreme example of a large penetrating wound of the chest, complicated with fracture and dislocation of the ribs, and wound of the lung, attended with hæmorrhage. In such cases, the difficulty in treatment is to prevent, on the one hand, the accumulation of blood within the thorax, and on the other, the entrance of air into the cavity, causing collapse of the lung. If, indeed, the hæmorrhage proceed from a wound of an intercostal artery, the indication is distinctly to secure it by ligature or compress; and had such been the source of bleeding in this case, the vessel could have been readily enough secured; but careful examination with the finger proved that was not the case, and, indeed, the character of the blood, and its admixture with air, pointed to the wounded lung as the source. Some surgical authorities advise, under these circumstances, that the wound should be closed, so as to arrest the flow of blood and prevent the entrance of air into the cavity. But, I confess, I never could see the rationale of this treatment; for, though the external flow of blood may be arrested, it favours, all the more surely, internal hæmorrhage and pressure, causing collapse of the lung in a form more dangerous, because less easily relieved, than that caused by the entrance of air. Indeed, if the amount of hæmorrhage from a wounded lung be great, I think the collapse of the lung, caused by the pressure of the air in the pleural cavity, may rather be considered beneficial, as the circulation through the lung is thereby greatly diminished, the wound contracted, and the hemostatic processes favoured. If the opposite lung be healthy, the patient breathes tolerably easily when laid on the injured side; and when time has been given for the wound in the lung to be firmly closed by clot and lymph, the pneumo-thorax can be relieved by drawing off the air by means of a canula and exhausting syringe, and the wound can then be closed. It was with these views that I had the patient laid on his right side so as to allow the blood to escape from the thorax, whilst by the arrangement of the pillows on which he lay, and of the bedclothes, air could not enter in very large quantities; and for a time his difficulty of breathing and other uneasy symptoms were relieved by this position. I was struck at the time that there should be so little collapse of the lung, considering the size of the wound, and that he had been lying on his back whilst it was exposed. This, however, together with the rapidly fatal issue of the case, was fully accounted for by the adhesions of the pleuræ on both sides of the body, revealed by the *post-mortem* examination, and the history of the case, that he had only recently been discharged from medical treatment on account of double pleurisy.

The last of these cases, that of L——e, offers an example of an extensive incised wound, dividing a bone, one of the main arteries of the limb, and freely opening a large articulation. Indeed, I never saw a hand so nearly severed by a single stroke. The result was most satisfactory. Scarcely a single bad symptom arose, and there seems some prospect that, by gradual passive motion, the joint may regain a considerable degree of movement. I believe that the very extent of the wound of the joint probably accounts for the favourable progress; for I have often observed, that in free openings into articular cavities, the local and constitutional symptoms are proportionally less than in small or punctured wounds, where the discharges are confined, and give rise to irritative fever, whilst from larger wounds they readily escape, and the inflammatory action is of a more healthy character. As to the method of treatment adopted, the indications to be fulfilled by the different parts of it are so clear, that I need do no more than state them: 1st, The arrestment of hæmorrhage, by tying both ends of the wounded radial artery; 2d, Washing out the clots from the joint; 3d, To close the wound, applying a leather splint, moulded so as to receive and support the ulnar side of the hand and keep the parts fixed, and at the same time allow the wound to be dressed readily without disturbing the position of the limb.

Case of Traumatic Tetanus following Wound.—James M——, æt. 49, on the 24th November 1859, fell, and received a lacerated wound of the forehead, an inch in length. He began to suffer pain and stiffness of the lower jaw on the 27th November, and this continuing to increase, he was admitted on the 29th November 1859. The wound was superficial, but sloughy. Marked inability to depress the jaw or protrude the tongue, together with a degree of pain at the lower part of chest, were complained of. The features were natural; bowels regular; and no convulsions had occurred. Ordered a warm bath and a purgative of calomel and jalap; the jagged sloughy textures in the wound to be divided down to the bone; and cupping over the spine, in the cervical and dorsal regions.

30th. Diaphragmatic pain, and also difficulty of breathing and swallowing, increased. Bowels opened twice. Ordered Tinct. Cannab. Indicæ ♏ xxx. every four hours. *Vespere.* Fits of dyspnœa very intense and of frequent occurrence, especially excited by attempts at swallowing. Patient breathes hurriedly, often 50 respirations per minute, the head for the most part being drawn backwards, exhibiting the muscles of the neck in a state of great tension. He is very restless, tossing about in bed, but as yet has shown none of the well-marked symptoms of opisthotonos. Pulse 100, weak. Ordered Calomelanos gr. ii., Pulv. Opii. gr. $\frac{1}{2}$, every three hours, to be blown into the mouth by means of a quill. For this purpose an incisor tooth was extracted.

December 1. Slept a little during the night; jaw more firmly closed; other symptoms unaltered. Ordered,

Chloroformi, ʒii.;
Tinct. Card. Co., ℥ss.;
Aquæ, ℥i. M.
Sig. A teaspoonful every two hours.

Vespere. Respirations, 32. Expectorates a good deal of frothy mucus. Cannabis Indica administered per rectum.

December 2. Slept for about two hours. Breathing easier; pulse 86. The paroxysms of pain and restlessness not so frequent, although trismus is now complete. Some tea, injected through the opening whence the tooth had been extracted, was swallowed this morning. After spending a comfortable day, some relatives visited him in the afternoon, and he became very excited. Convulsions, taking the form of opisthotonos, supervened, and he died about 7 P.M.

Remarks.—I have detailed this case of tetanus as completing the *resumé* of the external injuries and their consequences, which forms the first part of this Report. Unfortunately, cases of tetanus have been of rather frequent occurrence of late years; but in well-marked acute cases I cannot say that the various remedial measures I have employed have been attended with any more favourable results than temporary alleviation of the symptoms, whilst the *post-mortem* investigations have thrown little or no light on its pathology. The case narrated, though possessing no special points of interest, is instructive, as exemplifying the trivial nature of the lesions which give rise to this formidable disease, and the insidious manner in which it supervenes. As to the treatment adopted, the use of the chloroform given internally was tried, from its apparently marked successful results in a case reported by Dr Fair, of Buenos Ayres, in this *Journal* for 1859–60, p. 640. In the case referred to, so far as we can judge of cause and effect in regard to remedies, its curative powers seemed well marked; but in the one just recorded, it seemed to produce no good, and had to be abandoned, as tending rather to induce paroxysms; still, I think it worthy of further trials—alternated with the inhalation of the vapour. Cupping and counter-irritation along the spine, and purgatives, combined with the internal use of Opium and Cannabis Indica, are what I chiefly trust to; but care should be taken that the two last-mentioned remedies be administered in solution, and not in a crude form, so that we may be more certain of their action being induced.

(*The Second Part of this Report will appear in a subsequent Number.*)

ARTICLE II.—*Additional Remarks on the Birth-rate as affecting the Mortality of Children under Five Years of Age.* By WILLIAM J. MARSHALL, M.D. and L.R.C.S. Edin.

THE Registrar-General has recently directed attention to a very complicated problem,—the mortality among children in the various towns of Scotland. The comparison of the rates of mortality in the different towns can only be safe, or lead to sound conclusions, when all the conditions of this mortality in each town have been thoroughly ascertained, and can be duly weighed; but this, I am inclined to think, has not yet been done. The Report for 1858 says on this subject:—"48·2 per cent. of the deaths in the towns were of persons under five years of age. This is a very high proportion, and shows that moral and physical agencies exist in these towns highly prejudicial to infantile life. That this frightful mortality under five years of age might be greatly lessened there can be no doubt, as shown by the simple fact that its proportion differs in the different towns." Here it is assumed that a difference in the proportion of mortality in different towns is sufficient proof that it might be greatly lessened. Such a mode of arguing is not legitimate, unless it were true that a difference in mortality could be owing to *preventible* causes alone. Whereas, accurate investigation alone can determine whether the difference is owing to *preventible* or *non-preventible* causes.

In a former paper in this Journal (p. 332), I gave some illustrations of the fact that the proportion of deaths under five to the total deaths is not necessarily a sure criterion of the real mortality among children, as long as the proportion of births to total deaths in each town varies so much. In the last Annual Report it is admitted that "the more strictly correct mode of estimating the healthiness of a locality" is to compare the number of children dying with the number of children living at the same age in each year, and a Table with this ratio is given. I would submit that, to prevent error, such a Table should be given every year, instead of one showing the proportion of deaths under five to the total deaths. The principle, that the rate of increase affects the proportion of deaths under five to the total deaths, has been thus asserted in the article on Population in the *Encyclopædia Britannica*, which I consulted after writing the former remarks: "When in a mortuary register we compare the deaths under puberty with those above, *if the population be increasing*, we evidently compare the deaths belonging to a much greater number of births than those which have furnished the deaths above the age of puberty; and, consequently, these proportions must represent the country as *much less healthy than it really is*."

Notwithstanding all that has been said in the Annual Reports and elsewhere, it seems probable that a high birth-rate not only must affect the proportion of infantile deaths to total deaths, but also has some influence on the real rate of mortality among children; and that, in some cases, it may be reckoned among the agencies prejudicial to infantile life.

Great mortality among children may depend upon these, among other causes,—Congenital weakness, deficient nourishment and clothing, and external noxious agencies. In the zeal to remove external agencies, the former influences are apt to be under-estimated, whereas they are just as important. With a strong constitution and abundance of good food, it is marvellous how much that is otherwise injurious the human frame can resist. The *injudicious* advocacy of sanitary reform, in as far as regards external agencies, will do more harm than good. Expectations will be raised which cannot be realized, and disappointment will be followed by utter indifference, if not by scepticism and determined opposition.

Congenital weakness and tendency to disease must be reckoned a separate element prejudicial to infantile life, until it has been proved that any difference in congenital vigour depends only upon moral and physical agencies affecting the parents. There may be a difference in the mortality of infants born in the same external conditions, not explicable by any apparent difference in the parents, and only attributable to a difference in congenital vigour. All the conditions, therefore, affecting the strength of infants at birth in each town must, as far as possible, be ascertained before safe comparisons can be made between the different towns as regards infantile mortality.

Moreover, there may be commercial causes affecting the abundance of food in the various towns independently of the moral conduct or physical circumstances of individuals; and these must likewise be taken into account and investigated.

It seems probable that a high birth-rate may imply some conditions prejudicial to the strength of children, and the supply of food and clothing, and enhancing the power of other noxious agencies, and consequently may increase the mortality among children. It may be one cause among many which ought to be taken into account in calculating the mortality among children in towns where the population is increasing rapidly. In the Report for 1859 it is said,—"That the high death-rate brings into operation a wise *provision of nature* for preventing the extinction of our race; and that the births are increased to make up for the losses caused by the abnormally high death-rate; and that the greater the mortality which prevails among infants, the sooner does the mother bring into the world another being, speedily to fall a victim to those adverse agencies which cut off her former child." And it has been stated as a law, that "when the species is endangered by want of sufficient sustenance, or by other enfeebling causes, the tendency to increase is immediately augmented."—(*Blackwood's Magazine*, March 1837.) It is not easy to see the causal connection between the death of *one* child, or the dangers by which *it* is surrounded, and the birth of *another*; or how the losses could be made up if the latter is "speedily to fall a victim to the adverse agencies" which cut off the former; or what need there is of such an increase in towns, where many seem born only to die of want or disease, when there are so many born in agricultural districts who can and do come into towns to fill up the gaps. Observers disposed to take a more melancholy view of nature, have maintained, and with as much reason, that a high death-rate is a wise provision of nature to prevent the population from increasing too fast. There seems in some places to be as much risk of redundancy and overcrowding as of extinction. This mode of arguing, however, is an instance of that "excursion of final causes into the limits of physical causes, which hath made a great devastation in that province."—(*Bacon.*) At all times we should be cautious in our use of final causes, lest, in the progress of science, our notions of the dependence of phenomena be proved to be mistaken. In no case is the assertion of a purpose of Providence legitimate until we have actually discovered some connection between the events observed; and much less should an assumed "provision of nature" be our only proof of such a connection. For instance, what good purpose is served by a high birth-rate if the new beings speedily fall victims to the adverse agencies which cut off former children? or what advantage is it if, while a population increases in numbers, it declines in strength? Neither, on the other hand, is there any good purpose evident in a high death-rate, for it is not found in all cases to keep down the numbers of the population. A high birth-rate, in fact, in many cases affects the character of a population, making it, though more numerous, weaker and shorter-lived; and it is a question whether this weakness is not as likely to increase the number of deaths as the high mortality among infants is to increase the number of births.

It is true that there is a connection between the *adult* mortality of a place and the number of births, viz., that of a greater demand for labour, and greater consequent encouragement to marriage; but the present question is, What is the connection between the *infantile* mortality and subsequent births? Such a connection is implied in the popular notion, that conception will not take place so long as the mother continues to nurse. If this were true, it would follow that the sooner nursing was interrupted by the death of one child at the breast, the sooner would conception and another birth ensue. But this notion seems to require more solid grounds to rest on than have yet been discovered. It is notorious that the poor, as a general rule, nurse their children longer than mothers in the better ranks; and yet it is not the case that they have smaller families, or children at longer intervals. This apparently proves that the duration of suckling has little connection with the number of conceptions.

If protracted nursing, however, does not delay conception, it certainly not only has an influence on the vigour of the mother, and so may affect the strength of subsequent children, but it also, in the opinion of some, injures the child at the breast. Moreover, conception, pregnancy, and delivery, occurring frequently and at short intervals, are likely to deteriorate the mother's health, from not giving the constitution sufficient time to rally. Further, if a family increases faster than the amount of accommodation and the means of subsistence, all other noxious agencies will act more powerfully upon the redundant population from overcrowding and poverty. It may be true on the whole, and over a long series of years, that the population is regulated by the demand for labour; yet it is no less certain that, in particular localities and in certain seasons, the supply of labour has a tendency to outstrip the demand, the labour market becomes overstocked, and wages fall. In such circumstances an increase of population will prove a burden instead of a blessing. Besides, in all cases, children under five years of age can only be consumers, not producers of sustenance, and are likely to press upon the amount of room and food. Labourers and operatives very rarely have any provision when they marry, and seldom accumulate any savings afterwards; and as their income seldom increases after marriage, till some members of their family are able to work, in many cases no larger dwelling and no greater amount of food is provided for a family consisting of five or six members than for one consisting of only two. It is obvious to remark how injurious this must be upon children under five years of age.

If, therefore, protracted suckling, a rapid succession and a large number of children from the same mother, and great pressure upon the amount of room and food, are often associated with and implied in a high birth-rate, it is evident that in such cases its influence upon the rate of infantile mortality will not be small. It is worthy of observation that the birth-rates and death-rates among children are high in the busy seaports and manufacturing towns of Scotland, crowded with operatives and inhabitants of the most degraded and improvident classes. Among such populations it is true that moral and physical agencies prevail, prejudicial to infantile life; but may we not suppose that a high birth-rate also, implying a large number of early, imprudent, and prolific marriages, will affect the mortality among children, as it supplies a larger proportion of children less able to resist the other noxious agencies to which they are exposed, and pressing rapidly and severely upon the means of subsistence and accommodation?

It is this very tendency to redundancy in a degraded population which renders a legal provision for the poor so necessary to prevent destitution and degradation, and to encourage the hope of improving or maintaining their condition in life, "which is a better security for prudence and good conduct, and a better check on early and improvident marriages, than the mere fear of want."—(*Alison.*) It is because a redundant population in manufacturing towns of old countries aggravates all the moral and physical evils to which such a population is exposed, that emigration is so important. This is the reason why the poorest classes of the community should get aid to remove to new settlements, where fewer temptations will assail, and better fortunes may be acquired.

It may be true that great mortality is followed by an increase of marriages and of consequent births; but it is also true that early, improvident, and prolific marriages produce a weak and redundant population; and that, in so far as a high birth-rate implies such circumstances, it will be one element among many prejudicial to infantile life. From the complicated action and reaction of agencies in society, there is no paradox in maintaining that a high birth-rate is both a *consequence* and a *cause* of a high death-rate. Of course, it must remain for observation to discover how many of these conditions of danger are included in the high birth-rate in any town; but these suggestions seem sufficient reasons for suspending the judgment, and not hastily concluding that a high birth-rate cannot, in any case, be one out of many causes of a high rate of mortality among children.

GREENOCK, 23*d October* 1860.

ARTICLE III.—*On the Use of Plaster of Paris Bandages for Dressing Stumps after Amputation.* By Dr TRANEUS, Gottenburg, Sweden.

(*Communicated by* Dr COLDSTREAM, F.R.C.P.E.)

DURING the last two years many experiments have been made at the Infirmary of Uddevalla, in Sweden, upon the application of a fixed dressing of gypsum to amputated limbs. It was thought that the gypsum bandage first proposed by Mathysen for fractures, even the most complicated, would be peculiarly convenient if applicable to amputations, as thereby the patient would be spared all the suffering from repeated dressings of the wound.

The experiments made here have been very successful, and were carried out in the following manner, it being indifferent whether the amputation had been performed by the circular or the flap operation:—When the hæmorrhage has been staid, the threads of the ligatures are not to be confined as usual, but kept together, and led in the shortest way to the margin of the wound. Instead of plaster dressings, strips of cotton, impregnated with dry plaster of Paris or gypsum, and dipped in water just before use, are then applied; that is, the limb may be, as usual, enveloped in a compressing roller 12 or 15 feet long, impregnated with gypsum on both sides. The tourniquet may either be removed, or, if that is not advisable, applied to the main artery, at such a distance from the wound that compression is possible. Six or eight straps, impregnated with gypsum, two or three inches broad and a foot long, are then laid transversely over the wound, crossing from one side to the other, so as to keep the edges close together, only taking care that the ligatures be first laid hanging loose over the margin under those bands. Finally, another roller, as long as the first, and impregnated in the same way, may be laid over all these, to retain the whole dressing in its place. When this dressing has dried, it is not to be disturbed for three or four days; but, when it is wet through over the sore with the discharge from the wound, an opening is to be made with a knife and pincers or scissors, at points corresponding to the seats of the ligatures, whereby the matter from the wound may be removed, and its surface, if necessary, cleansed, and the ligatures, as usual, attended to. These little openings, of an inch in diameter, can easily be closed by any common plaster or ointment, and allow of the wound being inspected daily, especially as they may be enlarged by cutting away more of the dressing during the three or four following weeks. After this time the atrophy of the limb enables the surgeon to pull of the whole dressing like a cap, when the wound is generally healed.

The superiority of this method of dressing consists in the following, viz.:—

1*st.* The dressing is agglutinative in itself and in regard to the surface of the skin.

2*d.* It is not liable to be affected or injured by any discharge from the wound.

3*d.* It permits of being opened with the greatest facility.

4*th.* It is not at all injurious to the surface of the wound.

The particulars of this system are given in my pamphlet *Försök till Amputationens förenkling och Gips-bandagets användning pä amputations-stumpar af* Dr L. Traneus, Stockholm, pp. 28—of which the following are extracts:—

"To obtain the necessary gypsum sufficiently calcined, there should be procured a large piece of the gypsum commonly known in commerce, which is almost as hard as white marble, grey in colour and crystalline in texture; this should be broken into pieces of not above one cubic inch, spread in a single layer on an iron plate, in an oven, and exposed to a common oven heat, at least one-and-a-half hours, till it becomes white and easily breaks down into powder; in this condition it should be preserved in a jar, with a ground glass stopper, and pulverized when required.

"Rub the gypsum prepared as above, upon both sides of two twelve feet long roll bandages (which are afterwards loosely rolled together), and six to eight linen bandages, one-and-a-half feet long and two inches broad. These, with a basin of water, are to be placed as near the patient as is deemed convenient; and each bandage and stripe, just before the application, must be thoroughly wetted. One of the roll bandages is first applied, in descending turns, each turn, at least, half covering the other, as a 'contentiv-binda,' in, at least, two layers. The wound being a clean one, the edges, drawn together as close as possible, are fastened with 'suturæ nodosæ,' according to circumstances, but the extremities of the ligatures are not fastened as commonly, upwards on the stump, *but are laid along the line of the wound,*—the reason for this will be afterwards explained. The provided stripes are now, in succession, taken at both ends, immersed in water, and their middle applied across the wound, after which, the ends are firmly pressed upwards on the stump, so that the wound is kept together by a double layer. It is preferable so to apply them, that one or two small openings are left between the edges of the stripes, for examining the state of the wound. Outside these stripes is afterwards applied a gypsum wet roll bandage, to fix the stripes, but according to the common rules of the art. Within twenty or thirty minutes, the bandage is hardened, and the patient can, without inconvenience, be placed in bed. In cases of amputation of fingers or toes, the application of gypsum bandages being simpler, requires no particular description. The only really dangerous symptom which is now to be feared, is after-bleeding, which, if venous, will soon stop from the even pressure, partly of the 'contentiv bandage,' and partly from the bandage surrounding the stump; but if the bleeding is arterial, and cannot be stopped by the tourniquet, ice in a bladder should be tried, and 'astringentia and sulphuric acid,' failing which, the gypsum bandages must be removed.

"An inconvenience may arise from continued severe pain, which the patient sometimes suffers, both after gypsum, as well as starch bandages. In two such cases have we been prevailed upon to remove the bandages, but without being able to discover any reasonable cause for unusual pain. In two other cases, the bandages have been allowed to remain untouched, notwithstanding many complaints, and, on the final removal, no inconvenience followed. I must add that, in these cases, no pressure took place from too tight a bandage, as the limb, from every side, being equally pressed, had, as is always the case, diminished below the normal size. The formation of an abscess is possible, but the matter should easily escape by the fine canal formed by the ligatures. In one case, we put a hank through the abscess, and, in two weeks, saw it filled up with 'granulation.'

"Although I have not seen erysipelas, mortification, or other complications take place under this system, yet, should they occur, they could be treated in the usual way, retaining, in part, the gypsum bandage. On the third day, it is usual to loosen the ligatures, as also to discharge any matter, etc., that may have gathered; but by this system, it is only necessary to cut one or two holes in the bandage, where it is moist, opposite the margin of the wound, which can be easily done by raising the bandage by pincers. If the openings have been made at the right place, the ligatures will appear in the line of the amputation wound, and can easily be drawn out. By gentle pressure, the matter can be removed as well as cleansing by injection, through these openings, which, if desirable, can be afterwards covered with a small compress, anointed with some simple salve; during the following days it may be necessary to make a couple of openings besides, for the removal of the sutures; but this should not be hurried, for the longer the bandages can remain unmoved, the surer is it that the healing 'per primam intentionem' is advanced.

"To ascertain if all is going on well, in three weeks, that entire part of the bandage that covers the face of the stump, can be cut away, the circular portion of the bandage that remains will prove a protection and support to the newly formed edges of the healing wound. Generally, in most cases, the bandages can remain unmoved from three to five weeks, when the wound will be found well healed."

Article IV.—*Dental Surgery as an Adjunctive Branch at our Medical Schools.* From a Lecture delivered at the Medical School, Surgeons' Hall, May 1860. By J. Smith, M.D.

It has now for some years been customary at this school of medicine, to deliver, during the summer session, a short course of lectures on dental surgery,—on the teeth and relative parts, in their peculiarities of structure, disease, and treatment. This branch of practice, as a subject of lecture, occupies rather an unfavourable position; and on this account, and indeed from its anomalous nature in many respects, demands a somewhat more explanatory and formal introduction to your notice than might otherwise appear necessary.

Dental surgery, as it is called, has nothing very brilliant or otherwise inviting in its pretensions, to commence with. It cannot aspire to anything like the importance, the interest, or the fascinations possessed by other subjects of lecture daily under discussion here. The acquirement of any knowledge regarding it seems of no great moment. Any acquaintance with it is frequently deemed immaterial, and consequently optional, or perhaps superfluous. It is a subject only recently attracting much, or indeed any, special attention. It has been virtually relinquished by medical men, and, until lately, monopolized almost entirely by non-medical practitioners. It has, in fact, been almost altogether disconnected from medicine. It has been set adrift to wander an outcast in the dominions of irregular, unlicensed practice; and it is only at the present day that, like a prodigal son, it seems wearied of its vagrancy, and inclined to bend its steps homewards, and claim its relationship and its allegiance to legitimate surgery.

Under these circumstances, then, its position as a subject of lecture is inauspicious, to say the least of it; since, while the subject has the disadvantage of appearing as an interloper on the already existing curriculum of medical study, it labours under the additional drawback of making its appearance with an ungainly aspect and an odour of insignificance, real or imputed. But I say real or imputed, because to decide this matter constitutes a question at this very moment occupying a very much increased amount of attention, and the settlement of which is involved in no small measure of difficulties, not the least of which being to decide whether the indifference manifested towards the subject of dental diseases depends upon our possessing a knowledge of their unimportance, or upon the fact of no general knowledge existing about them at all,—the latter, in the meantime, promising to turn out the simple and true explanation of the whole matter. "The mouth," says Sahadi, in his *Philosophy of the Persians*,—"the mouth is a grotto, whose pearls are priceless." Grottoes of the kind, however, being rather common, familiarity with their pearls seems to have bred contempt for their value and forgetfulness of their existence.

Unimportant or not, however, as the subject may appear—and I have no wish to magnify its importance—it is of quite sufficient consequence to demand that medical practitioners should be a great deal better acquainted with it than they are,—a fact, the recognition of which I hope to show you as of considerable advantage in many ways.

I am not stating merely my own opinion on this point, but the opinion of the highest authorities we possess on such subjects; and as it is of some moment that at the outset I should be supported in what I have to advance in these lectures, let me quote the words of one or two well-known writers on this matter. I take John Hunter. "One might imagine," says that distinguished surgeon, "that the diseases of the teeth must be very simple, and like those which take place everywhere else in the bony parts of the body; but experience shows the contrary. The teeth being singular in their structure, and in some other circumstances, have diseases peculiar to themselves. These diseases, considered abstractedly, are indeed very simple; but by the relations which the teeth bear to the body in general, and to the parts with which they are immediately and intimately connected, they become extremely complicated. In order to understand these affections, it is, then, previously necessary to comprehend the anatomy and uses of every part of a tooth. Without such previous study it is impossible to account for many of those diseases and symptoms appearing in these organs; and many erroneous ideas of their pathology will be entertained, arising from an insufficient and incorrect knowledge of the structures in which they occur."

Joseph Fox, again, one of the writers following Hunter, remarks, in the introduction to his celebrated *Natural History and Diseases of the Human Teeth*, that "the necessity which exists of procuring relief when the teeth are affected by disease is a source of considerable occupation to many who, in large towns, confine themselves to this department alone; but in those situations where surgeons are obliged to undertake medicine and surgery in all their branches, it is indispensable that they should be as well acquainted with the structure and diseases of the teeth as of any other branch of practice whatever."—P. 9.

"I believe," says Leonard Koecker, "that I shall be able to establish the fact, that the operative part of dental surgery forms a much more important and more extensive branch of the healing art, and that its practice is attended with much more difficulty than what is the general opinion."—P. 14.

"No one," says Mr Samuel Cartwright, in the last published volume of the *Odontological Transactions*,—"no one who has undertaken the cares and responsibilities of dental diseases can fail to feel that they are strictly a branch of the surgical profession; and cases are constantly presenting themselves to the notice and for the opinion of every practitioner, which cannot but convince him that dental surgery and surgery, distinctly as they are often regarded, are too closely allied to bear separation."—P. 10.

Dr Benjamin Ward Richardson, in his *Lectures on the Medical History and Treatment of Dental Disease*, published this year, speaking of infantile dental affections alone, says:—"Such a breadth of subject is here opened—such a volume of important truths—that I have had supreme difficulty of disposing of the materials before me. The lecture would afford scope for a whole course, with each section as a text instead of a reading."—P. 146.

"Too much attention," says Mr Tomes, "cannot be given by those engaged in medical studies to dentition and its concomitant disorders. The diseases of the permanent teeth also, from their frequency and their painful character, and the important influence they exercise on other diseases situated in their neighbourhood, as well as on indigestion and various forms of nervous and spasmodic disease, command our attention, and render ignorance of their treatment unpardonable."

I have given these extracts, because I think it right to fortify myself with the weight of such authority; and I trust that, having done so, we may dismiss much apparent unimportance—much seeming insignificance attaching to the subject. In fact, it is only when we examine and know all that has thus been done and written by such men, that this seeming unimportance begins to be perceived as indeed more apparent than real.

That its importance, however, as a branch of medical instruction is, at least in some quarters, fully recognised, seems evident from the fact of no fewer than seven of the chief schools of medicine in London alone having regularly appointed lectureships on the subject, viz., St Thomas, Westminster, Guy's, University College, St Mary's, and the London Hospital; while, over and above these, a special dental hospital and a special dental school have been added within the last year or two, supported and conducted by most of the leading practitioners of that metropolis; and, lastly, the Royal College of Surgeons of England has, last year, instituted examinations in the same subject, and received the Royal Charter for conferring qualifications accordingly.

The interest and utility of such a branch of study as dental surgery must indeed be obvious to every one who for a moment reflects on the matter; and the necessity for a further acquaintance with it than at present exists is equally apparent, when we consider the anomalous nature of the diseased conditions to which the structures concerned are liable, and the modifications of surgical treatment required in their diseases,—that with every change occurring in these organs a change occurs involving the whole constitution and the very nature of the individual; in infancy, the crisis accompanying their first appearance; in adult life, the disorders associated with their diseased conditions or destruction; in old age, the marked alteration of the whole system accompanying their loss. When we consider the intimate and remarkable association of such phenomena with different marked epochs in the dental system, while, on the other hand,—important as thus seems an acquaintance with these matters,—we observe how little knowledge regarding them really exists, at the same time that disease connected with the teeth is one of the commonest cases demanding treatment, how comparatively few practitioners, for example—notwithstanding the familiar manner in which the subject is talked about, and the coolness with which death is constantly ascribed to its influence—would undertake to give even a slight *resumé* of the process of dentition, its different stages during infant, not to speak of fœtal life, and the various epochs at which its most ordinary phenomena, hidden or invisible, occur. How many instances are met with where practitioners do not know even the number of teeth which ought to exist within the mouth, and where the difference of form between one tooth and another is no better known; and, consequently, how often we find such trifling operations as are connected with the teeth undertaken with want of confidence, and performed with want of success, by medical men, who never would have run the slightest risk of failure had they merely paid a very little preliminary attention to the matter.

All this may be, and too commonly is, regarded as immaterial. Be that as it may, however, the frequency of those affections to which the teeth are liable during dentition, as well as after it has terminated, and the teeth are fully developed, renders it necessary for the practitioner not only to be prepared for undertaking their treatment, but even, were it nothing more, to answer such questions as are constantly being put to him regarding these organs, and in answering which he will require to be familiar with all the phenomena connected with the dental system from the first period of its development upwards; and be it remembered that patients too easily see whether he is so or not. Every medical man must expect to be, and indeed every family medical attendant is certain to be, asked regarding a child, during dentition and its accompanying ailments, how many teeth it ought at its age to have. He is equally certain to be asked, what teeth are those next in order to be expected. As a matter of course, he will be asked what the number of the complete first or temporary set is when they have all appeared; and, very probably, what is the number of teeth, including first and second set, then forming within the jaw. He is sure to be often asked, when should certain of the first set be shed, and at what age should they be replaced by members of the second or permanent series. He is equally certain to be asked, which of the teeth appear only in the permanent, and not in the temporary set; and these he has generally to point out. He may be asked what the number of the second set is, by how many it differs from the number of the first set, and in the addition of what teeth does the difference consist. This is the common and constant inquiry in every instance of malformed jaws, and irregular disposition of the teeth contained in them. Every day the question will be put to him, whether a tooth to be extracted will be replaced, how many fangs it has,—his answer here being, of course, checked when it is extracted;—to which kind of tooth it anatomically belongs, and many other questions, which, idle as they may be, it is becoming and it is his place to know how to answer. And these questions are sometimes put by those, such as experienced mothers and nurses, who may merely wish their own already-formed opinion confirmed, but who are far from being ignorant of what is a very close approximation to the real facts of the case, and what the answer ought to be; and it is exceedingly awkward in such circumstances—exceedingly painful for any medical practitioner to be unaware, for instance, either of the particular tooth which should be next in order of appearing at the time, or whether a succeeding tooth is to be expected at all; and still more awkward for him to have cut a child's gum, as the phrase goes, in the belief that a tooth is pressing upon it, trying to escape, in some curious quarter, where no tooth can reasonably be expected for six months or a year.

Again, every one knows that no structures are more liable to disease, nor the occasion of more annoyance, than the teeth in their mature state. Every medical man is being asked now and then to remove a decayed tooth; some patients who would altogether object to the operation being performed by a stranger, would willingly submit to the extraction of a tooth by their own medical attendant. But how many cases occur where, either from aversion to it or a want of confidence, a practitioner is at heart unwilling to undertake the duty, and perhaps, from unacquaintance with a few details, declines the operation, trifling as it is. This is more particularly important in country practice, as in large towns there are always those at hand who, as dentists, exclusively devote themselves to such cases. But a patient can scarcely be expected to resort to a distant city for aid in such instances—his only errand being the incapacity of his own medical attendant—if another practitioner who will undertake the duty is to be found in the immediate vicinity; and this very circumstance is no uncommon cause of a patient being altogether lost to a medical man.

A young practitioner starting in some favourable locality, and naturally anxious to establish a creditable reputation, may be called out among his first cases to extract a tooth. He goes, and perhaps finds that his new patient is some lady in delicate health,—perhaps the wife of one of the influential men of the district,—in fact, as the phrase goes, a "good patient." Recollections of not a few failures in dispensary and hospital practice now begin to flash across the surgeon's mind. His comfort on these occasions was the oblivion into which such failures in these days so speedily passed; but now he knows that failure entails a much more disagreeable, a much more injurious result. He must at all events make the attempt,—not now, however, in the presence of sympathizing fellow-students, but in that of probably two or three exacting and punctilious members of the family into which he has been introduced, and who are more than likely to consider his success or failure in such a trifling operation as the key to the acquirements and abilities of their new friend in more important matters. His conscience tells him that a tooth's extraction is, at the best, no joke to the patient, —that if he does it now as he has usually done it, it will be an outrage; he feels his want of knowledge—he operates distrustfully, and, ten to one, he does so unsuccessfully.

Apart, however, from the consideration of the practitioner's own feelings at such inability; apart from the consideration of that detrimental small talk to which such simple occasions frequently give rise, we must recollect that ignorance is here unwarrantable on other grounds. It is by no means merely to enable you to relieve toothache, or extract a tooth, that is the object of these lectures. Connected with this subject, we have the diseases of children during dentition, which, if not caused by, at least accompany this process,—diseases which are more frequent and more fatal than at any other period of life. Erroneous opinions may be entertained of the relation of dental development to those diseases, and perhaps exaggerated statements may be set forth regarding this point. But the universal admission, and the steady rate of occurrence, of certain diseases of infancy as accompaniments of dentition, manifestly indicate a liability to them at this period, and it is clear that much mutual influence must necessarily be exerted between that process and those disorders; indeed, in this case, it is only by the cultivation of a more general intimacy with the nature of dentition than at present exists among medical men, that the beneficial results of such improved acquaintance with this subject are yet to be ascertained. The diseases of the teeth, and their consequences, are considered much more trifling than is really the case. If we consider the irritable constitution during infancy, and even for a time beyond that period, and recollect the whole number of teeth of the first and second sets, being at that time simultaneously developed within the jaws,—no fewer than 48 being contained in them, between 6 and 7 years of age—20 of these being already cut and in their natural situation in the mouth, while 28 exist in different stages of growth within the jaws,—we can scarcely wonder, taking such circumstances into account, that dentition should exercise an important influence on the health. And although the diseases of the permanent and fully developed teeth may not themselves be of so dangerous a character, yet they are equally frequent with the disorders occurring at an earlier period in those of the temporary set; and from their own painful nature and indirect evil results, such as tumours, abscess, neuralgia, dyspepsia, etc., a knowledge of their diseases and their treatment becomes in many cases of the utmost consequence. Besides, there are perhaps no operations, either minor or major, at which patients become more irascible on failure, than operations on the teeth. Let a man's tooth be injured—broken, say—be it ever so excusably: he glares at the operator, and bestows forgiveness on him, if he does it at all, only like a martyr on his murderer.

We must recollect that all dental disorders are connected with tissues, such as the teeth are, very peculiar in their construction and general nature altogether, when compared with other organs; and it is in this way easy to perceive the benefits to be derived in the treatment of their diseased conditions from a previous knowledge of their anatomy and physiology. One of the principal objects of special lectures is, that more attention may be devoted to such structures as are in their organization complicated or obscure, and, it may be, exceptional or unique. To become familiar with the healthy and morbid conditions of such organs, requires attention to be devoted to their special study,—as is the case, for example, with the eye and its diseases; and the peculiarities of structural and functional character met with in the development, the tissues, and the diseases of the dental system, appear to render such attention equally necessary in this case also. Because, whether we regard the teeth as exerting a morbid influence during their development; or, as being themselves bare and exposed as they are within the mouth, so directly liable to chemical and physical destructive agencies; or, as demanding so many special adaptations in the treatment of their diseases,—we find them to be in a manner unique. We find them acting positively as foreign bodies during their development within the bony texture of the jaws, where their bulk is as rapidly increased as their number is largely augmented, while, at the same time, the bones containing them undergo very little increase of size. This itself is one circumstance which imparts an anomalous character to many affections connected with the teeth. Again, in their fully developed condition, we find the teeth, unlike any other bony structures, bare and unprotected, as we have said, within the mouth, and exposed to all those injurious influences which, to any organ approaching osseous tissue in its constitution, would in similar circumstances be detrimental. Lastly, their distinctive structural peculiarities require a style of treatment as different from that of other bony textures, as these two cases are in the characters of their morbid conditions themselves.

I am aware that many topics involved in these considerations are included, or understood to be included, in the subject matter of other lectures; and that in cutting out a *special* course for subjects already discussed in more than one *general* course of lectures, I may be thought like the man who, with a large hole already in his door for the cat, proceeded to cut a small one for the kitten. But there is an advantage in bringing together in a collective form those facts which are otherwise unconnectedly discussed by different lectures and at different times. Another circumstance is, that certain affections occurring during infancy, if not specially considered, are apt to be overlooked, by their forming a sort of debateable ground between the province of the lecturer on midwifery and that of the lecturer on practice of medicine; dentition being in full activity at the termination of the period of lactation—a period when the diseases of infancy cease to be more particularly adapted for introduction into a course of lectures on midwifery—while they seem as little suited for discussion along with the ordinary subjects of the lectures on practice of medicine. In short, at this early period of life, the diseases are of a somewhat anomalous character, and in their nature stand by themselves.

It is, indeed, upon such principles that special lectures in any department of medicine have ever been established, and I need not refer to the inestimable benefits resulting from their introduction. One of the leading and most interesting characteristics of the age in which we live, is what is termed by political economists "the division of labour,"—an arrangement by which the separate working and individual exertions of many are made to converge towards the accomplishment of one grand object—the organization of one central and complex whole. Such is the system admitted and approved by those engaged in manufactures and other commercial enterprises; and although we can scarcely speak of manufacturing medical men, yet pupils are the teacher's raw material, and to turn them out the finished article requires a division of labour no less complete.

It has been argued that special lectures are apt to engender specialists, and that all specialists in medicine are objectionable. But two kinds of specialists exist: the one having his whole stock of knowledge limited to the specialty he practises; the other possessing all the acquirements and qualifications of the general practitioner, but devoting them all to the specialty he has adopted. The first is the man described by Goldsmith, who without the body of the shirt may cut a figure in the ruffles; the other has the ruffles, but he has the shirt besides. It is, in fact, on the sense in which the term specialist is employed that the whole depends.

As for teaching the science of medicine without an arrangement into separate special branches, the thing is impracticable. It is the method by which the greatest results are produced by the least amount of labour. It falls under the old illustration of Sertorius, where two men are described as competing with one another which should pull off a horse's tail in the shortest time: one set to work pulling at it in a mass, and failed; the other adopted the plan of pulling it off hair by hair, and succeeded;—so is it in the acquisition of medical instruction.

Again, it has been argued, why devote such attention to some departments of medicine, while others are no less in need of as much culture, and perhaps more? Why make dental disease, for instance, a subject of special lectures, while so many other diseases equally demand increased investigation. But this style of argument requires no comment. It only makes matters worse. Its import is similar to that of the exclamation of a foreign gentleman, upon a lady remarking to him that his hands were dirty—"My hands! If you saw my feet." The two cases are precisely parallel.

Besides, those changes ever occurring in society demand increased acquaintance with and increased attention to certain innovations in some special branches of practice; and it is little ailments, not the performance of dashing operations, or the miraculous cure of hopeless diseases, that constitutes the mass of average cases daily falling to practitioners. It requires much philosophy, says Rousseau, to see what goes on daily before our eyes. Medicine, like charity, should begin at home,—with the treatment of homely, domestic disorders; and I think you will find diseases of the teeth to belong to that catalogue. Surgeons certainly should be able to undertake their treatment, and if the regular dentist will necessarily be required at least for completing some cases, the surgeon ought at any rate to be able to prepare the way for and to understand these manipulations: he ought to know what is required of the mechanical dentist, and when his interference is required; and certainly every surgeon should even know the general characters of mechanical dentistry—as, for instance, of artificial teeth, their kinds, their modes of fixation, etc.—when we reflect on the frequency of such occurrences as swallowing teeth, and the difficulty of extracting them from the œsophagus or gullet unless their form is familiar. Because although cases do occur where such swallowed teeth pass through the whole alimentary canal, without injuring or being injured,—patients with more economy than squeamishness occasionally even replacing in their mouth the wanderer on its appearance in society once more,—yet in many instances death has been averted only by the dislodgment of such foreign body from the fauces or gullet, where it had become almost immoveably impacted.

Finally, one of the most useful, indeed essential adjuncts to this, as well as to any similar course of lectures is clinical teaching, or rather practice, in the application of knowledge orally conveyed. An opportunity for this will, I trust, soon be afforded in this instance, as, according to the recent example set by other schools of medicine, arrangements have been made for instituting in Edinburgh a special dispensary set apart for this purpose. As yet, however, these arrangements are incomplete, it being desirable to ascertain the average attendance of patients before admitting pupils. Very shortly, however, we may expect to be enabled in this way to combine the advantages of a practical along with a theoretical course of instruction in all those affections comprehended in the province of dental surgery.

ARTICLE V. — *On Infantile Mortality, as illustrated by Private Practice; with Suggestions for Future Inquiries.* By W. T. GAIRDNER, M.D., Fellow of the Royal College of Physicians of Edinburgh.

IN the course of some inquiries in which I have lately been engaged,[1] into the rate of death of infants under one year in England and Wales, it occurred to me as being a desirable thing to obtain from the records of private practice some data bearing upon this subject. I accordingly applied to two or three friends in the medical profession, engaged in general practice, on whose faithfulness in recording facts, and willingness to communicate them, I thought I could rely with confidence. The data so obtained are not, of course, strictly comparable with those furnished by the Registrar-General, and used by me in the researches above referred to. But they are of importance, as the nucleus of an inquiry which might probably be greatly extended with advantage to the public, and which almost every practitioner largely occupied in midwifery practice might follow out within his own sphere of observation. I therefore think it right to place on record the more important of the facts furnished to me with so much care and goodwill, in the hope that, although insufficient as a foundation for general conclusions, they may hereafter be amplified and generalized so as to afford a large amount of valuable instruction.

The question which I put to the friends who so kindly undertook to assist me was this: Of the infants born alive under your immediate observation, what proportion die during the first year of life? I requested that this question might be answered, if possible, in some detail, and with reference to certain particulars pointed out as being probably attainable. I also requested that the induction might be founded upon not less than 200 cases, and that these might be taken strictly as they occurred, *i.e.*, entirely without selection; and that the doubtful cases might be stated as doubtful, rather than simply excluded from the inquiry. In this way, having regard to the usual large per-centage of the mortality at this period of life, I hoped to obtain results tolerably free from accidental sources of fallacy, and, at all events, to a certain extent illustrative of the broad average of infant mortality in general practice. The fear of encroaching too much on the kindness and on the time of busy men deterred me from seeking a larger basis of induction; though it is only right to mention that several of my friends spontaneously offered me the results of a search through their books, extending over several years.

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[1] See a paper, read at Glasgow, Sept. 1860, to the Association for the Promotion of Social Science.

I shall now proceed to give some of the results which appear to flow from the details furnished to me; avoiding, in the meantime, the publication of names, in order not to give undue prominence to a few districts in the present imperfect state of the inquiry.

A. A pastoral and rural district, mainly belonging to two great landowners, and peopled by a thriving tenantry, mostly sheep-farmers, with their shepherds, farm-servants, and labourers. The population is, on the whole, increasing since 1841, at which period it had received a considerable check ascribed to emigration, and in the lower district to the conversion of tillage farms into pasture. There is one small town frequented by summer visitors, and considered to be in a high degree favourable to health from its situation and surroundings, although there is great want of water and proper conveniences within the houses, as in most rural villages in Scotland. Besides this small town, there are hardly any aggregates of population, within the range of the inquiry, larger than small hamlets or villages. The general character of the county is that of a hilly region, gradually subsiding into an extensive plain or wide *strath*, and watered by a number of considerable streams. It has the reputation, in fact, of being eminently a healthy district, and the general appearance of the population bears out this idea.

In the district referred to, Dr M. is one of two resident legally-qualified practitioners, and holds the parochial appointments; having also a large practice among the better classes. Dr M. has been kind enough to tabulate for me the leading details, as regards this inquiry, of 277 cases taken without selection. He writes me as follows, in answer to a particular inquiry on this point:—"The list which I sent you was not from any picked class, but from all and sundry, rich and poor, well-living and dissipated. Certainly, for some time, we have not had any infantile epidemic; but when they do occur, I think very few die under one year. I know the district so well, and almost everybody in it, that I am quite sure you may take the percentage as given in my list as pretty correct." The only qualification which this statement suggests to me is one which Dr M. may have been prevented from remarking upon by a natural delicacy of feeling. There is, at least, one irregular practitioner in the district, who is employed chiefly in midwifery, and among the more ignorant classes of the community. I think it not improbable that this man may draw off from the two legally-qualified surgeons a certain proportion of that infantile mortality which occurs among the improvident, dissipated, and even criminal classes; but to what extent this cause modifies the averages there are no means of ascertaining.

The general results of Dr M.'s inquiry are as follows:—Among 277 infants born there were 11 deaths under 1 year of age, amounting to a little less than 4 per cent. (3·97 per cent.); in the same number there were 17 illegitimate children, inclusive of three which were subsequently made legitimate (according to the law of Scotland) by the marriage of their parents. The births out of wedlock were, therefore, a little more than 6 per cent. of the whole. Two of the deaths were among the illegitimate children, one of these being one of twins. The causes assigned for the 11 deaths are as follows:—

Bronchitis,	2 cases.
Inflammation of lungs,	1 case.
Hydrocephalus,	1 „
Measles, with head affection,	1 „
Diarrhœa,	1 „
Spina bifida,	1 „
Hereditary syphilis,	1 „
Imperfect nourishment, etc. (case of twins),	1 „
Cause not stated, but parents unhealthy and dwelling bad,	2 cases.[1]

These results are certainly remarkable; and, as they form the lowest infantile mortality that has yet been brought under my notice in any series of cases, publicly or privately reported, I have thought it right to state the details with some fulness. It will be observed that there is only one fatal case of epidemic disease, and that diarrhœa, commonly so large an element in infantile mortality, is also represented by only one death.[2] Tubercular and scrofulous diseases, too, make small appearance in the returns, though in the case of "inflammation of the lungs" both parents are reported scrofulous. Syphilis appears to have contributed to the list of deaths in two instances. In both, the father was first affected, but in one case the disease had been communicated by him to the mother, and so appeared in the offspring; in the other, it seems to have concurred with other circumstances to cause the deaths of two very young infants in the same family.

B. A rural district of considerable extent, including a village or small town of about 1000 inhabitants. The leading industry is agriculture, though both coal and iron are worked in the neighbourhood, and there is a considerable manufacturing population within five miles' distance. An endowed school, of some celebrity, gives a special character to the village, and brought a large accession of inhabitants to it about 40 years ago; since which time the increase of population has been comparatively small.

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[1] This last (so far as I can make out) is the only instance of two deaths at this early period of infantile life in one family. It is stated that "the father had syphilis at one time, and the mother was scrofulous."

[2] Dr M. remarks on this case:—"The disease was prevailing in the house at the time of the child's birth. The mother was affected by it. The child was weakly, and imperfectly nourished."

There are three resident medical practitioners, one of whom has the parochial appointment; and there is little or no irregular practice. Dr S. writes me that "there are no births in this neighbourhood not attended by a medical man, except a very few cases of rapid delivery." The following abstract of the details furnished by Dr S. may therefore probably be regarded as pretty accurately indicating the actual infant mortality of the district referred to.

Of 288 children born under the notice of Dr S., 22 died during the first year of life, excluding two still-born children. The deaths were therefore to the total number of births in the proportion of 7·64 per cent. About 12·5 per cent. of the births (36 out of 288) were illegitimate; nevertheless, only three of the deaths occurred among this class; one other illegitimate child indeed was still-born, but as this was a case of triplets, and as the other two children survived, the illegitimacy can hardly have had anything to do with this result. In five of the deaths, the father of the child belonged to the professional and independent class; three of these cases being in one family. In almost all the rest of the 24 deaths, the parents might be said to belong to the labouring or wage-receiving class of the community, the farmers and middle class generally being almost unrepresented in the return (in so far as deaths are concerned),—a fact of some importance when it is considered that 29 of the whole number of infants born were the children of farmers, and that of these not one died within a year after birth. On the other hand, the somewhat miscellaneous class designated "labourers," furnishes by far the largest contribution to the infantile mortality, there having been six deaths among 37 children whose fathers were of this class. Among 25 children of "ploughmen" there were two deaths; showing in this class (so far as the small numbers permit an inference to be drawn) a decided advantage over the class of "labourers."

C. A practice of considerable extent in the neighbourhood of Edinburgh, in a populous rural district involving portions of several parishes, and one or two rather large villages or small towns. Dr M. holds a parochial appointment.

The population is to a large extent agricultural, but there are several mills employing both men and women in considerable numbers. There are also several collieries in the district, most of which, however, have their own medical attendants. There are numerous practitioners within a circle of five or six miles, and within a like distance there is one town of 5000 inhabitants; besides Edinburgh, which is so near as to modify the population to some extent, especially in summer.

Dr M. has given details of 363 infants born under his observation. Among these, however, it is necessary to throw aside 96, as from the movement of the population and other causes the fate of the children cannot be positively ascertained. In the remaining 267 cases, the deaths within the first year of life were 23 in number, or 8·61 per cent. More than 7 per cent. of the whole 363 births were illegitimate;[1] and of these, three (exclusive of one still-born child) are ascertained to have died within the first year; there being, however, seven of the 26 illegitimate births of which no account can be given. The proportion of deaths among the illegitimate is therefore higher than among the legitimate, in so far as the small numbers allow a conclusion to be founded upon them. The deaths were due to a great variety of causes; and it does not appear that epidemic disease contributed very largely to their sum, as there are recorded only one case of scarlet fever, one of diarrhœa after measles, two of hooping-cough, two others of diarrhœa, and one of croup (probably brought on by imperfect nursing). There were several cases of convulsions and of hydrocephalus; and in a few instances the death is recorded under circumstances leading to the belief that gross carelessness, or worse, may have been the cause of the fatal event. In one instance, the mother was insane; in two others, of drunken habits. The employment of the women in the mills may, in some of these instances, have led to neglect of the offspring, even when the children were legitimate. Thus, among 14 children of mill-workers there were two deaths, neither of which appear to have had any other assignable cause except the neglect of the mother. In like manner, in the class of female domestic servants there were 14 children born, three of whom died under one year; and in one, if not two of these cases, it seems probable that the carelessness or neglect of the mother may have hastened death; the children of this class being, of course, almost all illegitimate. Farmers and farm-servants form by far the larger proportion of the specified occupations of parents: in the former class, there were 19 children born, with two deaths; in the latter, 58 children, with three deaths (one of these being one of twins, the other of which was still-born). It is, perhaps, not always easy to separate the class of farm-servants from that of labourers; but in the latter also the mortality was extremely moderate, being only one among 13 infants born.

In correcting his data by the Registrar's books, Dr M. has found 20 other deaths, under one year of age, in the district over which his practice extends; the mothers having, in these cases, been either without medical attendance, or, at all events, not attended by him. Several circumstances indicate that some of these mothers were among the most neglected class of the community. A much larger proportion of the deaths than in Dr M.'s cases were from epidemic causes; and one was from small-pox in an unvaccinated infant.

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[1] "The illegitimate cases," Dr M. writes, "I am absolutely certain of; for I always mark them in my note-book as the case takes place." Dr M. adds, however, in a subsequent note, that the full extent of illegitimacy in the district is probably not represented by the per-centage in his practice; the mothers of illegitimate children being mostly attended by the midwife, unless there is something in the case to require more than ordinary assistance.

D. A rural district in the west of Scotland, comprising two adjacent parishes of upwards of 8000 inhabitants in all, of which number, however, upwards of 2000 reside in a seaport town much resorted to in summer by visitors, and having two medical practitioners. Dr A., who resides almost at the centre of the inland district, holds the parochial appointments in both parishes, and has a very extensive practice among all classes of the community, there being no other practitioner, whether regular or irregular, within five or six miles in any direction. The district is almost purely agricultural, except in so far as this element is modified by coal-mining, and by a little handloom weaving, which was formerly an occupation of some importance, but is now fast becoming obsolete. The coal-miners are considered to be the most ignorant and dissipated portion of the population, and the villages occupied by them present a marked contrast to the principal village, which is almost exclusively inhabited by artisans and by agricultural labourers, and is remarkably well kept. One of the rural villages suffered very severely from the cholera epidemic of 1854, while the others were nearly exempt. The land is mostly arable, and in high cultivation; there are numerous residences of country gentlemen, some of whom devote much of their time to agriculture and country business. The country to the north is one remarkable for mineral wealth; it is traversed by railways in every direction, and has numerous thriving towns. Within six miles is a prosperous and rapidly increasing community, which must now consist of nearly 25,000 inhabitants, and forms an excellent market for agricultural produce. The population of the strictly rural district, however, to which Dr A.'s observations apply, is not much subject to fluctuations, and his return may therefore be regarded as practically complete, nearly the whole of the inhabitants being personally known to him.

Dr A.'s return extends to 250 births attended by him personally, or only not so attended from accidental circumstances. The number of children born, however, amounts to 257, there having been 7 twin cases. Among these 257 infants there were 32 deaths (exclusive of 5 still-born children), amounting to nearly 12·5 per cent.[1]

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[1] Dr A. writes me as follows:—"I attribute much of the infant mortality here to maternal vanity and want of attention. Mothers dress up their infants and take them out in all weathers, and long distances, for the mere purpose, I believe, of exhibiting them to their friends, sometimes even within the first month after birth. Others, again, are engaged in field labour during the day, leaving their little ones in charge of mere children, who do not know how to

Six of these deaths were from diarrhœa, and a like number from disease of the chest; three were from scarlet fever, the only other epidemic disease that appears among the details. There is room for the suspicion that several infants perished from want of maternal attention; for in several cases the cause of death is stated to be unknown, and in others the cause appears to have been want of proper nourishment. The illegitimate twin children of a vagrant died within two weeks after birth in a mysterious manner, and one illegitimate child of a farm-servant is recorded as having been probably smothered in the bed-clothes soon after the birth, which took place without professional assistance. The illegitimate births were 20 in number, involving two cases of twins, and being between 7 and 8 per cent. of the whole number of births. The deaths among these 20 cases were 7 in number, or more than one-third of the whole.

Among the various classes predominating in the returns, the infantile deaths took place as follows:—Among 65 labourers' children, there were 9 deaths under one year, and 2 still-born; among 28 children of farm-servants, 3 deaths, and 2 still-born; among 52 farmers' children, 5 deaths; among 14 gardeners' children, 2 deaths; among 15 miners' children, one death (premature birth), and one child died in the birth. Among 5 children of farmers' daughters (illegitimate), there were two deaths; one of the mothers dying of phthisis soon after the child. It will be observed that the mortality among the children of the miners is less than that of any other class here mentioned; a remarkable fact, although in this instance founded on too small an induction to be stated in a general form.

E. For purposes of comparison with the preceding statements of infantile mortality in country practice, it appeared to me desirable to obtain the results of some considerable general practice in a large town. It is by no means an easy matter, however, to obtain from town practice details equally trustworthy with those given above; because few practitioners largely engaged among all ranks of the community are able to keep notes of their cases with the requisite amount of accuracy, and still less are they able to maintain such a personal acquaintance with their *clientelle* as allows them to follow up the inquiry as to the fate of the children. Two of my medical friends in Edinburgh, however, have kindly assisted me by placing in my hands a condensed statement of their experience. Both these gentlemen are in very large general practice, and from having

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feed them; and the little ones, in consequence, suffer either from being overfed or from the mother's heated milk disagreeing with them. Probably both causes contribute to swell the infant mortality. It is nothing unusual for an infant to be taken out to the hay or harvest field to get suck from its mother; and, should it afterwards be griped, toddy is prescribed to relieve it; medical aid, in many cases, being only asked afterwards, when medicine can do little good."

resided many years in Edinburgh, have been able to attain a very secure position among the more permanently resident portion of the middle class, and among the most respectable and industrious of the artisans. One of the two holds a parochial appointment in one of the worst quarters of the town; but the most of the routine work, including the midwifery, is done by an assistant, and its details are not included in the returns given to me. The summary which follows may therefore be considered as bearing upon the question of infantile mortality in the *respectable* classes of a great town—excluding almost entirely the pauper class, and also the more abandoned and destitute of the lower class, not being paupers. With these exceptions, I believe that the two fields of practice cultivated by the gentlemen referred to are as broad and as general (when taken together) as could possibly be obtained in this city; and I may further state that in this as in all the other cases, I feel entire confidence that the data have been extracted and arranged with the most scrupulous accuracy and attention to the conditions of the inquiry. The general result of the two statements is not very different, although, as might be expected, the practice which centres in the Old Town shows the greater infantile mortality of the two:

a. Old Town, 206 births—died under 1 year, 16 = 7·8 per cent.
b. New Town, 200 births—died under 1 year, 13 = 6·5 per cent.
Both together, 406 births—died under 1 year, 29 = 7·14 per cent.

It thus appears that the results of town practice among the respectable but not wealthy classes closely resemble those of country practice in healthy and tolerably thriving districts, in which all classes of the population are thrown into a general average. The slight advantage in favour of town practice shown in the following comparison, evidently depends on the exclusion of the destitute and criminal class, which, if admitted in any considerable quantity, would very quickly have turned the scale in favour of the country. It may be mentioned also, that in the town practices here referred to the illegitimate births are insignificant in amount.

F. *Comparison of Infantile Mortality among the Respectable Classes in a large town, with the Infantile Mortality of four country districts.*

Country, 1089 born—88 died under 1 year = 8·08 per cent.
Town, 406 born—29 died under 1 year = 7·14 per cent.

It is thus clearly shown that it is almost entirely to the influence of the lowest and most neglected class that the towns owe their very high rate of infantile mortality as compared with the country districts. Indeed, it is quite certain, as I showed some years ago in my lectures on Public Health to the Edinburgh Philosophical Institution, that some parts of Edinburgh have a lower death-rate, both infantile and general, than most of the rural districts in the kingdom; and, in like manner, that other parts of Edinburgh have a much higher rate of mortality, both infantile and general, than those manufacturing towns which, taken as a whole, are considered to be lowest in the sanitary scale. Thus, in three first-class streets the annual infantile mortality under 5 years of age was 48 in 1000 living, and in five streets chiefly occupied by the respectable artisan class it was 54 in 1000; while in the closes and wynds it was found to vary between 138 and 173 in 1000. It is sufficiently evident that it is in these last frightful figures, which, however, are probably much exceeded in the worst districts of the manufacturing towns, that we are to look for the reason why Edinburgh stands lower in the sanitary scale than the surrounding rural districts.

G. *Comparison of Infantile Mortality in several important Classes of the Community.* The data for this inquiry are not, as yet, sufficiently extensive; but, such as they are, I submit them here as a nucleus for further observation.

Among 100 children of farmers mentioned in the course of the preceding investigations, there were 7 deaths under one year, giving an average mortality of 7 per cent.

Among 111 children of farm-servants (male), there were 8 deaths, or at the rate of 7·2 per cent.

Among 115 children of labourers there were 16 deaths, or at the rate of 13·9 per cent.

Among 146 children of artisans or skilled labourers, there were 9 deaths, or at the rate of 6·85 per cent. The difference between this and the preceding class is very remarkable.

I need hardly point out how desirable it would be to extend this inquiry, both by furnishing larger numbers of the classes mentioned above, and by taking in the children of large and important classes which have more or less of local importance, such as soldiers, miners, tailors, shoemakers, shopkeepers, fishermen, and various classes of the artisans inhabiting large towns. It would also be of great importance to ascertain the rate of mortality among the children of the professional classes, and of the nobility and gentry of independent means. The data for such an inquiry could, I believe, be easily enough furnished by a few of our leading accoucheurs.

H. *Comparison of Infantile Mortality among Legitimate and Illegitimate Children.*

The preceding observations yield a total result of 1086 legitimate and 99 illegitimate children in the country districts, the proportion of the latter, therefore, being upon the whole 8·35 per cent., or about 1 in 12 of the children born. But the result as regards mortality was doubtful in 89 of the legitimate and in 7 of the illegitimate cases. There remain—

997 legitimate children, of whom died within 1st year 73, = 7·32 per cent.
92 illegitimate children, of whom died within 1st year 15, = 16·30 per cent.

In other words, the proportional mortality of the illegitimate children within one year after birth was more than double that of the legitimate children. The excess in the mortality of the illegitimate children is likewise apparent in each of the four country districts; the numbers, however, being too small to give a secure result, except for the collation of the whole.

Conclusions and Desiderata.—The preceding facts and inferences, imperfect as they necessarily are, may tend to excite curiosity, and perhaps to lay the foundation of what I cannot but regard as a most important inquiry. If it be true, or indeed anything like the truth, that even in healthy rural districts, and under the observation of medical men, the mortality of very young infants varies as much as between 4 and 12·5 per cent.; if, in different classes of the community in the same districts, the difference can be shown to be as great as between 7 and 14 per cent.; and if the evidence of these differences lies so easily within reach of medical practitioners throughout the country, as appears from these returns, then there can be little doubt that we ought to have, ere long, a series of most valuable contributions to sanitary and social science from the personal experience of individual medical men. The infantile death-rate presents for this purpose an immense advantage over the general death-rate. The latter requires to rest upon such an extended basis of observations, that it is practically removed into the field of operations of the professed statist. No man can determine for himself the rate of mortality of any group of persons with whom he is specially concerned; and the death-rate of a large town, or of an extended district of country, is composed of such a vast variety of elements that, even when excessive, it cannot be easily brought home to the consciences and hearts of men. What is everybody's business is nobody's business; and very few persons can be got to take interest in, or even to comprehend, the ultimate generalizations in which the sanitary state of a whole district is supposed to be expressed. But if you could prove to a particular group of persons, that in a particular year they had lost 12 infants where they need not have lost more than 4 or 5; still more, if you can point out pretty distinctly, from comparative observations, the cause of this excessive mortality, it may well be believed that questions of sanitary, social, and even moral and religious amendment, might be made to assume a new importance in the eyes of the most dissipated and unthinking of mankind.

Now, it is a well-established conclusion of sanitary science, that infantile death-rates are among the severest and most accurate tests of the health of a community;[1] because infants are not only the most delicate instruments, so to speak, for measuring the force of agencies opposed to the health of all; they also bear with them into the world the imprint of the evil tendencies of their parents, inheriting many of their good and bad qualities, and too often falling a sacrifice to the unthinking folly or criminal neglect of those who gave them birth. Besides, while many complex causes act on the adult life, which science can hardly hope to bring clearly into view in any particular case, the causes that lead to excessive infantile mortality are usually much simpler, and many or most of them belong to the class of removable causes of death. And this remark is more especially applicable to the case of infants under a year old, whose tender lives depend almost entirely on the care, the thoughtfulness, the affectionate instincts, and the physical health of the parents, and especially of the mother. To bring home to the hearts of the mothers of this country, with a view to a great and enduring domestic reformation, the awfully prodigal waste of infant life that is perpetually going on around their own hearths, would surely be a mission of beneficence well fitted for the medical profession. The present inquiry aims at placing in the hands of every physician and surgeon in general practice, the means of making such an appeal with the best possible effect.

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[1] "The death-rates of young children are, in my opinion, among the most important studies in sanitary science. In the first place, their tender young lives, as compared with the more hardened and acclimatized lives of the adult population, furnish a very sensitive test of sanitary circumstances; so that differences of infantine death-rates are, under certain qualifications, the best proofs of dif-

To do so, however, it will be necessary to determine, upon a more extended basis of induction,—1st, What are the minimum, maximum, and average loss of infantile life during the first year, in the ordinary course of medical experience? 2d, What are the minimum, maximum, and average for each great class of the community? 3d, What is the extent of the variations produced by season, climate, and other causes which may be regarded as irremovable? When these points have been determined within certain limits of accuracy, we shall have a residuum of facts directly applicable to the case of every isolated group of persons to whom it may be conceived desirable to apply this most searching test of physical and moral health.

The Registrar-General's returns may, to a certain extent, be rendered available for determining some of these points; but as the basis and method of these returns are essentially different from those of the inquiry now proposed, it is desirable, in the first instance at least, to keep the two lines of investigation quite apart. I would therefore suggest, that practitioners willing to co-operate towards the present inquiry, should tabulate their cases in such a manner as

ferences of household condition in any number of compared districts. And, secondly, those places where infants are most apt to die, are necessarily the places where the survivors are most apt to be sickly; and where, if they struggle through a scrofulous childhood to realize an abortive puberty, they beget a still sicklier brood than themselves, even less capable of labour, and even less susceptible of education. It cannot be too distinctly recognised, that *a high local mortality of children must almost necessarily denote a high local prevalence of those causes which determine a degeneration of race.*"—*Mr Simon's Preface to Dr Headlam Greenhow's Papers on the Sanitary State of England*, p. 27.

to show at least the following facts, all of which will be of the utmost use in arriving at a general conclusion:—

1. Indication of case (corresponding with private note-book, for reference). Sex.
2. Date of birth..
3. Legitimate or not.
4. Social position and occupation of parents; *i.e.*, of the father, when the child is legitimate; of the mother, when the child is illegitimate or left chiefly dependent upon her.
5. Died or not during first year of age.
6. Remarks on cause of death, condition of dwelling, health of parents, moral condition, education, etc., as illustrating the event in cases of death. Other deaths in the same family, etc.

I have only to add further, that I shall be happy to aid in bringing before the public any information on this subject, which my medical brethren may not think it expedient to put in the form of an independent communication.

ARTICLE VI.—*Case of Intra-Uterine Small-pox.* By Dr ALEXANDER R. SIMPSON, Secretary to the Edinburgh Obstetrical Society, and formerly President of the Royal Medical Society.

(Communicated to the Edinburgh Obstetrical Society.)

CASES of intra-uterine small-pox are not so rare but that most of the Fellows of this Society have met with one in their own practice, or have seen them when exhibited here by others. It is but very rarely, however, that we have an opportunity of tracing out the progress of the intra-uterine disease so precisely as I was enabled to do in the case I have now to record.

Mrs M'L., aged 22, and married for five years, miscarried on Friday, the 1st of July, 1858. She had had six miscarriages previously, and had usually gone to about the 7th month of gestation before the fœtus was expelled. One fœtus only was retained till the eighth month, and lived up till the time of its birth. She was generally in the enjoyment of good health; began to menstruate when only 12 years of age, and menstruated regularly every fortnight. After the occurrence of the miscarriage in the beginning of July, 1858, already referred to, she menstruated once—in the end of the same month; but before the time for the recurrence of another catamenial period arrived, she had become impregnated; and when I saw the patient for the first time, in the end of October, she presented all the appearance of a person in the third month of uterogestation. She was then ordered to take ten grains of chlorate of potash three times a-day, as all the facts that could be furnished in regard to the repeated miscarriages seemed to point to some atrophic disease of the placenta as the cause of the death of the successive infants. The patient continued to do well until the beginning of February 1859. On the 7th of that month, I was sent for to see her; and on my arrival, I was told that on the 5th she had been out walking, when she found herself so poorly that she was obliged to hurry home. She had had some shivering fits that same morning, a good deal of sickness, and a feeling of soreness all over the body; and she was then labouring under a high degree of fever, while the skin was covered with a multitude of rough red spots, evidently the commencement of some eruptive disease. On the following day, it became quite clear that the patient had got an attack of modified small-pox. A number of discrete pustules broke out all over the body, most abundantly on the face, hands, and arms. They ran the usual course, and began to fade away after the ninth day; so that, on the 23d of the month, eighteen days from the date of the onset of the disease, the patient was able to walk out of the house.

Up to this time the fœtal movements continued active as usual; but a few days afterwards, on the 25th or 26th of the month, they began to be feebler and less frequent. The patient took no heed of this circumstance for a day or two; but having at last become alarmed about it, she came to me. This was on Monday, the 28th of February. I found the sounds of the fœtal heart to be then very faint, feeble, and indistinct; but on visiting the patient at her own house on the following Friday (March 4th), I heard them again quite distinct, though less forcible than natural. I did not see her again till the forenoon of the Monday following; and on then listening through the stethoscope over the womb, found that the fœtal heart had ceased to beat, or, at least, that its sounds were no longer audible. On the preceding day, the patient had been out walking, when, as she averred, she became rather suddenly sensible of a feeling of weight, or falling down, in the womb, which compelled her speedily to return home. That, in the sensation thus experienced by the patient, we have an indication of the time when the fœtus died, it is of course impossible to determine; but there can be but little doubt that the probable date of its death was the 5th or 6th of March. On the 8th, the patient met with an accident; for, while voiding her urine early in the morning, the utensil on which she was seated broke beneath her, and a number of cuts and scratches were inflicted on the hips and thighs. Fortunately, however, the genital organs were uninjured, and the patient speedily recovered from the effects of her mishap. I did not again see the patient till about two o'clock in the morning of Friday, the 22d of March, when I was summoned to deliver her. She had been suffering more or less from occasional pains, referred to the region of the womb, for two days previously; but the true labour pains had only set in about two hours before I arrived at her bedside, and by that time they had already succeeded in expelling the feet and body of the child. The head was soon delivered, and the placenta and membranes followed in due course.

As had been fully anticipated, the child at birth presented evidences of having been *in utero* the subject of an attack of variola; for a number of pustules, umbilicated in the centre, were found scattered here and there on the back, the head, and the thighs. The cuticle was separated, or easily separable, over great part of the body, and the fœtus altogether was in the state of decay which we always expect to see in the case of a child that has lain for two weeks dead in the maternal womb. The pustules were but few in number, and but sparingly distributed over different parts of the body; and in consequence of the degree to which decomposition had gone on, several of them, as the members of the Society could observe, had fallen out at points where the cuticle was scaled off, and had left only cup-like depressions in the cutis vera. But enough were still left of a character sufficiently distinctive to show that the fœtus had suffered from small-pox, and that it had died at that period of the disease when the pustules had existed for seven or eight days—supposing always that the development of variolar pustules follows the same course in an intra-uterine subject that it does in a new-born child. The death of the fœtus in this instance, however, was not to be attributed to the attack of small-pox alone, or even to that chiefly. On the contrary, the attack, to judge from the small amount of eruption that had taken place, seems to have been, on the whole, rather a mild one; for the appearance of the pustules indicated the attainment of a stage of the disease too far advanced to allow it to be supposed that the intensity of the fever caused the infant's death before the eruption had time to be developed. It seems probable, indeed, that it would have survived that disease, and it might have been carried to the full time, and have been born alive, had there not been at hand another source of danger in the morbid condition of the placenta. As the members of the Society could perceive, the placenta was unusually small, pale, hard, and fibrous-looking, having undergone a change which has sometimes been described as fibrous degeneration, or cirrhosis of the placenta,—a morbid condition of that organ which is well known to be an occasional cause of intra-uterine mortality.

But although the fœtus died, in all probability, of the defective nutrition and impeded oxygenation consequent on the diseased state of its placenta, and not of the attack of small-pox, of which it showed such distinct traces; yet the history of the case is interesting, as showing very exactly the date of the onset of the disease in the fœtus, and the length of time during which the mother suffered before the progeny in her womb became affected. We have, First, the mother attacked with the disease on Saturday, February 5th; the eruption appearing on the 7th, and beginning to fade on the 16th or 17th; and the patient so far recovered as to be able to be out of the house on the 23d of the month. She had fairly recovered, and the eruption had faded away, and left only its yet vascular scars behind, when, Secondly, on the 25th or 26th of the month, twenty or twenty-one days from the time of the commencement of her own attack, she began to miss the fœtal movements; and this marks the date of the onset of the disease in the fœtus. On the 4th March, six or seven days after the fœtus thus seemed to have become affected, its heart-sounds were still distinct and clear; but on the third day afterwards, they were no longer to be detected. On the seventh or eighth day from the date of the commencement of its disease, the fœtus had died. In short, after the disease had run a course of three weeks' duration in the mother, and had expended itself in her constitution, the fœtus became affected by it, and died on the seventh or eighth day afterwards, although it was not expelled from the uterus till the end of another fortnight.

ARTICLE VII.—*Surgical Cases and Observations.* By A. M. EDWARDS, Lecturer on Surgery, Edinburgh.

TUMOUR IN THE NECK.

JOHN FARR, æt. 49, a broker, living in the West Port, sent to me with a moveable swelling, pulsating, about two inches in circumference, on the right side of the neck, upon a level with the upper margin of the thyroid cartilage. The tumour hard, with pulsation imparted to it from the subjacent bifurcation of the carotid.

Five months before, the patient complained of paroxysms of dyspnœa towards midnight, occasional slight dysphagia and pain over the right sterno-clavicular articulation, also of a numb feeling in the right side of the head, and an aching stiffness in the neck.

There was no bruit over the tumour, but a loud and distinct one over the innominata. He has had occasional hæmoptysis.

His general aspect is suspicious, presenting a careworn expression on a pallid countenance; he is losing flesh, and inclination for any exertion.

Diagnosis.—The swelling consists of a mass of glands enlarged by some irritating cause. Malignant disease not yet ascertainable.

Treatment.—To keep up the strength; endeavour to allay any attacks of inflammation in the tumour, which *might* be removed; but I decline doing so, as I believe it to be a secondary affection to some other existing disease. I recommended him to consult Dr W. T. Gairdner. So he accordingly went into the Infirmary. While there, Dr Gairdner detected a swelling behind the right posterior pillar of the fauces, which pulsated distinctly, like an aneurism. Under Dr Gairdner's care he greatly improved, and the bruit over the right sterno-clavicular joint became less distinct. I did not see him again for some weeks; during which period he left the Infirmary, and consulted another medical man, who applied blisters to the tumour. I found it considerably increased in size; as large now as a pear. He entreated me to operate, as some medical men had told him such a proceeding should be tried; and hinted that the cause of my declining was timidity. I again refused, *first*, because I never thought this external tumour more than a symptom of malignant disease elsewhere; 2*d*. That opinion is now confirmed by the tumour detected by Dr Gairdner, which cannot be moved, while the one first described can; 3*d*. Removing the outer tumour would not relieve his symptoms.

I offered to perform tracheotomy, which was declined. He died early in September, suffocated during sleep, nine months from his first remarking the tumour.

I examined his body about forty-eight hours after his death. There was no aneurismal swelling of the innominata; the heart I was not permitted to examine.

The external tumour consisted of a mass of glands enveloping the external jugular vein, and lying over the carotid artery. Some of these glands were apparently healthy; others soft, grey, and pulpy, saturated with medullary cancer. On dissecting deeper towards the pharynx, the knife sunk into a bed of soft cancer, coming from the front of the three superior cervical vertebræ and the basilar process of the occipital bone. For several inches down, the vertebræ were separated from the soft parts by grumous matter, which seemed to have trickled down in front of them from the diseased mass above, pushing forward the pharynx like a pouch. The upper part of the gullet, as well as the back of the soft palate, were involved in the disease. The arteries were healthy.

Remarks.—This case belongs to a class of great importance to the practical surgeon, who is unwilling to decline giving a patient every available chance, and at the same time, for his own and the patient's sake, must be careful lest he begin an operation which cannot be accomplished.

About three years ago, I was strongly urged to operate upon a man named Stewart, æt. 40, but apparently at least 60 years of age, grey-haired and haggard. This patient had remarked, nearly four years before, a tumour in the left posterior triangle, which was painted with Træ. Iodinii; it was moveable at first, but became firmer as it increased in size under this stimulating treatment. When he applied to me, it was as large as a water-melon, had pushed the trachea towards the right side, evidently enveloped the great vessels of the neck, and extended deeply. The only argument in favour of an operation was the fact, that it was originally superficial, and moveable, and its growth not remarkably rapid. But I doubted whether the one so described had been more than a glandular mass which had been gradually involved in a malignant growth from deeper tissues; and, moreover, the anatomical reasons were quite sufficient to put any cutting operation out of the question. This patient died exhausted, from starvation, at the end of three years from the date of his first remarking the tumour.

A *post-mortem* examination showed a mass of medullary cancer, spreading from the transverse processes of all the cervical vertebræ, enveloping the carotid artery, the subclavian, and the other structures, with their veins in their neighbourhood. It was very vascular, and contained in its substance clots of various ages.

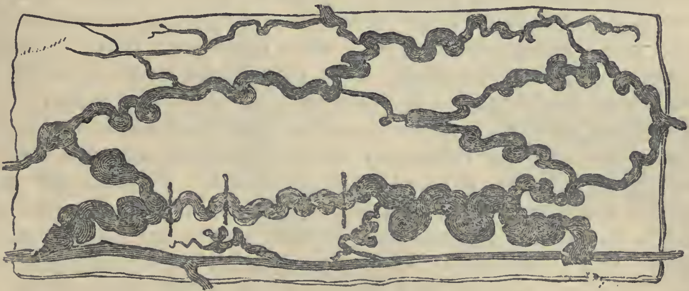
There is some degree of similarity between the cases of Farr and Stewart; in both, the superficial tumours being the earliest symptoms; in the former, however, the disease involved parts more immediately important to existence, and caused death in nine months, while in the latter the patient lingered on for four years.

They are interesting, so far as showing the necessity for care in giving a prognosis in tumours of the neck even when they appear most simple, and that it is well to make as extensive and minute an examination as possible. I believe one most valuable diagnostic to be the general appearance of the patient. A strumous subject may appear dispirited, or one with a large fibrous mass may appear anxious and careworn; but the jaded face, gradually decreasing vigour, and wasting tissues of the victim of malignant disease, are too characteristic to be overlooked in the majority of cases.

NOTES ON VARICOSE VEINS.

It occasionally happens that a patient, after undergoing what is termed the radical cure of varicose veins, is disappointed by a return of the disease. This may occur after any of the methods recommended for obliteration of the large veins, whether it be that of Velpeau, or Fricke, or Davat; or whether they be destroyed by caustic, or subcutaneously divided, as was first advised by Sir Benjamin Brodie.

It would seem that scarcely enough importance had been attached to the large and free anastomoses of the subcutaneous veins, or credit given them for that compensating power of enlargement which is recognised in arteries. The accompanying drawing shows how this may be a cause of Velpeau's operation being only temporarily beneficial. It is taken from a preparation which I removed



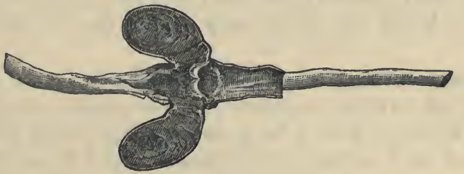
from a subject in the dissecting rooms. The posterior saphena vein was varicose, and distended, except at the middle of the calf, where its track was crossed by three transverse cicatrices, about an inch apart, showing where three pins had at some period been introduced, and allowed to cut their way out.

On removing the portion of skin with the veins, and cleaning the cellular tissue from the latter, I found that between the upper and lower of these scars the vein was a mere cord, flat, hard, and adherent to the skin ; but on each side of this, the collateral veins were much enlarged, and though some were tortuous, others were nearly straight. They communicated with the large vein above and below its obliterated portion. Such a preparation is more difficult to draw on wood than would be thought ; and the accompanying drawing gives but a poor idea of what I have endeavoured to describe, though the detail, so far as it goes, is accurate.

I should be sorry to occupy space either in discussing such a trite subject as varicose veins, or in appearing to show distrust in that excellent method of treatment, obliteration by needles. But I think it ought not to be looked on as an operation which can always be accomplished at one sitting,—or rather the object attained without (subsequent to the first operation) watching the development of the collateral venous circulation It has been observed, that though a multitude of small vessels enlarge after tying a main artery, only a few continue to supply its place ; so I believe we would find some points in the course of a varicose vein where, owing to some large branch emptying itself, it would be well to insert a pin, or some other appliance, which would enable it to support the pressure from above, and so by timely care prevent the disease returning to a painful extent.

The most common forms of varicose veins found in a dissecting room are the common tortuous subcutaneous veins so familiar to all surgeons,—the small arborescent cutaneous veins in the skin, as they pass towards the large veins, losing their varicose appearance. In such cases I have generally found that if you select one of these cutaneous veins, and follow it, splitting open its tube with fine scissors, you will come to an obliterated portion, or one where only a very small passage remains pervious to the blood. This obliteration is generally an inch at least from the venous trunk in which the small vessel ends, and on its distal side the latter is pouched.

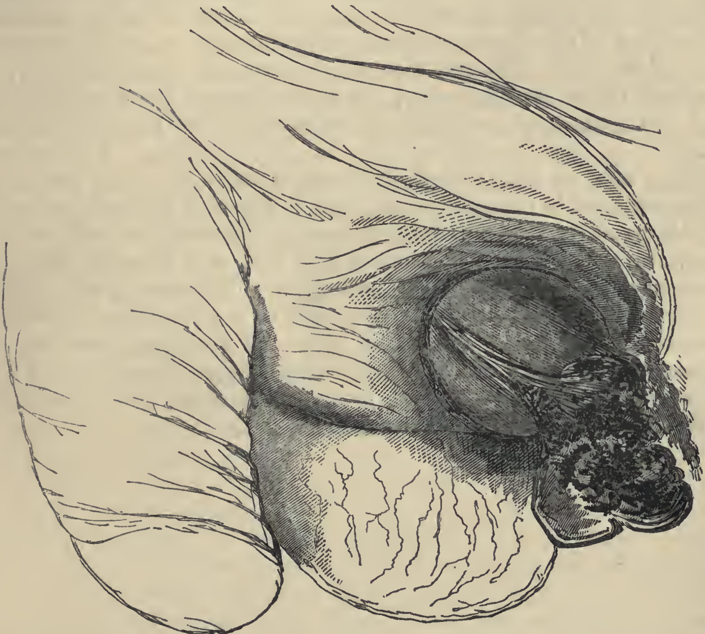
In flabby subjects, with swollen feet and bloodless skin, the deep veins of the leg are frequently found distended, tortuous, and at times plugged with clots of various shades. Perhaps the most common appearance of the small deep veins is that shown in drawing No. 2,—viz., a single pouch or varix on the convex side of the valves. This is commonly found on the small veins of the popliteal space in many subjects, and indeed on all small veins, which are liable to be pressed between muscles. Their valves are generally found perfect, the wall of the pouch includes all the thickness of the vein-wall, while the contained clot is in layers like that of an aneurism; it does not generally encroach upon the calibre of the vessel,



and is not accompanied by any of the thickening of adjacent tissues which we may remark round the ordinary varicose vein, or appearance of venous disease. Elsewhere, in one case, indeed, I found a similar pouch on the popliteal vein the size of a filbert nut.

PROTRUSION OF THE TESTICLE FOLLOWING ACUTE ORCHITIS.

So far as my experience goes, this condition is but rarely met with. And, indeed, the so-called benign fungus of the testicle is, as Mr Curling remarks, now but seldom seen to what it was before the diseases of the organ were so fully understood as they are now. I was called to the patient from whom the accompanying drawing was taken, by Dr Fraser of Clarence Street, who has been so kind as to furnish me with the following notes.



Duncan Campbell, æt. 20, a baker, in robust health, contracted a gonorrhœa in the beginning of May 1860, which was treated in the usual manner. At the end of a fortnight, his left testicle became enlarged and painful; the pain and swelling increased, at last forcing him to leave off work, take to his bed, and send for the doctor.

Leeches, evaporating lotions, and purgatives were made use of, and the pain and swelling subsided. The patient imprudently left his bed, and another attack of inflammation came on, an abscess quickly formed, and opened spontaneously, and through its opening part of the testis protruded; the swelling however rapidly subsided.

I sent for Mr Edwards, who performed an operation. Looking at the man's scrotum now, it is difficult to detect any trace of the former disease.

When I first saw this patient, a black slough was hanging from the surface of the testicle, the whole of which had protruded or been turned out of the scrotum, the skin having drawn in round the orifice. The slough, on examination, was evidently a portion of the tunics of the testicle, and hung merely by a slender attachment to the surface. This I clipped off, and left a smooth surface of a pink colour, covered with creamy pus. The shape of an ordinary sized testicle being well-defined, there was of course no doubt as to the course to be pursued. I therefore paired the edges, and drew them asunder, making, with the handle of my scalpel, a sufficient separation of the deeper tissues, and the testicle was at once drawn, as it were, back into the scrotum, the wound closing over it. I inserted three hare-lip pins; the wound closed by first intention, and the patient was walking about perfectly well on the seventh day.

This was an instance of Professor Syme's operation under the simplest possible circumstances; but, I think, it is worth recording for the rapidity with which the symptoms followed each other. The spontaneous escape of the testicle, shut out, as it were, by the rapid contraction of the scrotum following the subsidence of the general swelling of the parts, and the simplicity of the operation required to restore it. None of the other measures recommended, such as pressure, either by itself or along with astringents, would have been of service in this instance; I believe they must have necessitated a far more prolonged illness than the other.

Part Second.

REVIEWS.

Regulations for the Duties of Inspectors-General and Deputy Inspectors-General of Hospitals, of Staff and Regimental Medical Officers, for the Organization of General, Regimental, and Field Hospitals; for the Duties of Officers, Attendants, and Nurses; for Sanitary Measures, and Precautions for Preserving the Health of the Troops; for the Duties of Sanitary Officers attached to Armies; and for Drawing up Sanitary and Medical Statistics and Reports. War Office, 1859.

We have made it a duty to keep our readers informed, from time to time, of the different and varying phases of discussion through which matters affecting the profession in the army have passed during the last six years; and we have not been backward in taking our own part in these discussions. When this book appeared, offering itself, as it does, as the end and upshot of these discussions, it seemed advisable to defer any notice of it until some interval of time had given opportunity for its being studied by the light of its practical results. It was a very easy thing to speak of essays and oral evidence and reports in the same impromptu manner in which they had been themselves put forward; but the case is different when we come to look at anything which assumes the character of a definite law. On the wording or punctuation of any seemingly unimportant clause very much may depend through varying interpretations and applications. When you take up, critically, a code of Regulations, every word and syllable has to be weighed; but the two grand points which have to be discovered are the pervading motive or principle, and how that is carried out in practical application to details. This book has now been sufficiently long before the public to enable us to characterize both these points. We are free to confess that some opinions which we formerly expressed pretty strongly have been, in course of time and by further observation, modified or altered; and, also, that these changes of opinion have been in the direction indicated by these Regulations. We say further, that, taken as a whole, these Regulations are good, and that they answer almost all the necessities which existed before their appearance, and which so loudly called for a remedy. They are prefaced by a letter from the present Secretary for War, who was the head of the Commission charged with the framing of them, in which he states what was in want of change or definition, and how it was proposed to find a remedy. The whole body of the Regulations must be studied to find out how far the remedy has been applied. Mr Herbert's letter is much too long for quotation, so we shall content ourselves with extracting one clause, which comprises a great deal:—"The duties to be performed are not sufficiently defined, nor are the responsibilities clearly placed on those charged with specific duties."

Let us see, then, in what way position and function are defined. Hospitals are divided into three classes, and three only—general, regimental, and field hospitals. The first and last terms are synonymous, the only difference being in the locality and external circumstances. General hospitals are to be governed by a Governor; regimental hospitals by the surgeon of the regiment, subject to the control and interference which we shall subsequently mention. The whole body of officers, under the Director-General, are divided into two classes,—inspecting and executive. The latter is again subdivided into two,—regimental and staff. In the position of the two latter classes there is a marked difference. It is this: while the former are placed for "professional duties under the instructions and control of the Director-General, they are *subject to the orders of their respective commanding officers;*" the latter are to be appointed to, transferred, or removed from their stations by the Director-General, and are *placed under the orders of the principal medical officer.*" All duties of supply and account are in charge of the purveyor. Excepting when at a general hospital, in which case he is under the orders of the governor, this officer is subject to the direct orders or control of no one but his departmental chief at the War Office. Under no circumstances is he under the orders of the principal medical officer. His duty as regards supplies is simply to furnish whatever he is required to furnish, and to execute what repairs and alterations he is required to execute; his authority being, in the case of general hospitals, the order of the governor; in the case of regimental hospitals, the requisition of the surgeon. While he is to do all things, and to issue all things which he is required by these functionaries to do or issue, he is, in case of apparent extravagance of demand, to make a representation to the War Office, but the issue is to be anterior to the representation.

Now, nothing can be better arranged or more distinct than all this. If it is only attended to and strictly followed, every man must be able to know his exact position and the precise degree of responsibility which rests on his own particular shoulders. It is well known that a great part of the scandal which some years ago attached itself to the doings of the Army Medical Department was due to the inconsiderate and embarrassing interference of the class called "principal medical officers" with matters over which they had no right of control whatever, and into which they should never have been allowed to intrude. One would fain hope that in most cases this was caused by the effect of anarchy and an absence of proper definition on weak, easily-disturbed minds, and that but little of it was occasioned by a silly, childish love of dominion, or that it was ever a feeble and jealous attempt to display the appearance of an authority which no one supposed to be, in reality, possessed. There cannot now be a shadow of an excuse for any such miserable occurrences as those which are said to have disturbed and disgraced the hospital at Scutari. The principal medical officer's function is an inspecting one, and that only. He is not even permitted to make his inspections at irregular or self-chosen times; he is to do it "at such times as the Director-General may appoint." It may be as well to specify what is to be the character of these inspections by quoting the *ipsissima verba* of the Regulations, the heading of each section which details the different points of inspection. He is to "see, examine, ascertain, inquire, advise, satisfy himself." That is all. There is not a word about direct interference or giving "orders." This last word, "orders," is an ugly word for a medical man to use, and it is one which will be least often in the mouth of those who most fully realize their true professional function. But orders are required, and some person authorized to give orders is required, wherever men are brought together under the influence of discipline. Orders, then, are only to be given by the executive class,—by the surgeon in regimental hospitals, by the principal medical officer in general hospitals—the latter assuming executive functions under the circumstance of being in charge of a general hospital. A principal medical officer is no more competent to give orders in the hospital of a regiment, than he is competent to give orders in the orderly room or on the parade ground of a regiment. So long as these Regulations exist, the commanding officer or the surgeon who may permit any external interference, from any non-executive quarter, with that part of the interior arrangements of the regiment which is the regimental hospital, is, simply and plainly speaking, in the attitude of neglecting and avoiding the responsibility which is imposed on him by his commission; and it adds to the severity of blame with which such conduct ought to be visited, that there is likely to be always reason to impute feebleness, indolence, or cowardice as the motives for such neglect and avoidance. The subject seems to be so little appreciated, and commanding officers are so apt to endeavour to secure their own ease by leaving that part of their regiment to the mercy of any meddlesome principal medical officer, that it would be well if all parties were occasionally reminded, as Lord Clyde very sharply reminded the Indian army lately, that "superintending medical officers are not the commanding officers of regiments." In point of fact, their duties are higher and more in accordance with true professional capabilities. All responsibility in a regimental hospital is vested in the surgeon, subject to the approval of the commanding officer, and subject, also, to correction by the "advice in writing" of the inspecting medical officer at such inspections as he may be directed to make by the Director-General.

Is there reason to hope that the spirit and letter of these admirable Regulations will be carried out in their integrity? Not, it is to be feared, until there has grown up a new generation, ignorant of the traditions, prejudices, and precedents of former bad times. For some time to come it may be attempted to give an esoteric interpretation to them, dictated by personal views; and when any one conscientiously seeks to apply a more rigid and truthful one, there may come into play the doctrine of "supporting authority," by which obstruction may be enforced. That pernicious and immoral doctrine, which maintains that fact, and truth, and right, and justice are as nothing when put into one scale, with "authority" in the other,—that accursed devil's doctrine will be brought forward to do the devil's work, to hinder good intentions, and to frustrate a loyal obedience to rule and order.

In these Regulations there is one feature which is an entire novelty. Medical officers are, for the first time, charged with what are called sanitary duties; that is to say, there is prescribed for them the duty of representing, recommending, and reporting on the conditions which may be adverse or favourable to health. And for the performance of this delicate and important duty they are fortified by rules being laid down, which are to be binding on all, and which are thought likely to be promotive of health. All these rules are quite unexceptionable, and seem likely to accomplish all that amount of good which may be expected to result from frequent reports and representations. It would have been very wrong to have given a greater power of direct interference than is permitted. In connection with the great talk that we have heard about "sanitary science," it is interesting to note what that is when put in the form of precise regulations. It is found to consist in opening windows, in keeping privies clean, in enforcing a circulation of air about beds and bedding, and in attending to drainage, diet, and water supply,—all matters of great importance, of transcendent importance, much more important than physicking after the manner of English apothecaries, as the world is beginning to find out, involving considerations which are revolutionizing the whole practice of medicine,—but hardly to be put forward as a science. In point of fact, all that is scientific about sanitary matters is to be found in the physiological principles which we were taught at school. The application of them is a matter of method and handicraft, not of science. Our best modern sanitarians are such men as Mr Jennings of Blackfriars Road, and Mr Doulton of Lambeth. Another new feature is the appointment of officers whose duties are to be exclusively those of "sanitary officers." Should the officers so appointed deem it their duty to interfere with regimental arrangements—and it seems hardly possible that they can always avoid it—there will be constant trouble and but little good. Up to the present time the only appointment under this head has been that of an officer so attached to Sir Hope Grant's force. By a singular coincidence, he is an able, discreet, and judicious officer; and, so far, everything seems to be going on well in China. A time of real trial has not yet occurred there. It is easy to remain free from blame when money is lavished, as is being done in the East.

"Sanitary science" has been one of the current cants of the last few years; statistics has been another. We have seen in what poor, shrunk proportions the former appears when the big-mouthed talk has to be reduced to practice. Let us see now what is made of the latter. It will hardly be credited that, in one of the forms here given, the reporter is required to specify the exact date, nay, that he is even requested to specify the fragment of the day of the incursion of every disease; that is to say, in the future army records, the very day on which such diseases as phthisis, Bright's disease, etc., etc., first commenced, will be shown for every case. Truly, a remarkable statistical result! It will hardly be credited that, while there was an epidemic of catarrh at some places last winter, every case of that very simple disease will appear as recorded under a different head, because, through some oversight, catarrh has been omitted from the nosonomy adopted, and that this *zymotic* disease will be rendered as one of the *local* diseases—bronchitis. It will hardly be credited that, while a pretty, fanciful nosology has been adopted, which is mostly based on the theory of the causation of diseases, there is a separate column in which the reporter is required to specify his own private notion of the cause of each case; being thus given the opportunity of contradicting one section of a line in another. It would be quite useless to go on multiplying such instances as these. When one hears what some people think and say of what they call statistics; when one sees how eagerly they jump at broad laws from imperfect, confused, inapplicable, and incorrect data; when one sees how eagerly they accept a false premiss, and how they revel in a string of irrelevant conclusions; when one sees people here and there devoting what little intellectual *vis* they may possess to the multiplication of unmeaning "returns," and then calling the miserable result Statistics, for no other apparent reason than that it is a fashionable word of three syllables;—when one sees all this, one is very apt to be reminded of a passage in the *Guesses at Truth* which would make a very fitting motto for most so-called statistical forms and the use that is made of them. "One of the wonders of the world," said Archdeacon Hare, "is the quantity of idle, purposeless untruth,—the lies which nobody believes, and which everybody tells, as it were from the pure love of lying, or as if the bright form and features of truth could not be duly brought out except on a dark ground of falsehood." It is quite awful to think of the mass of crudities and unveracities which are put forward to be treasured as if they were the very final outcome and the oracles of brightest truth. It may be well to protest that those who are made to be guilty of the "idle, purposeless untruth," which is always to be found in imperfect statistics, do sometimes know that they are guilty, and may plead compulsion in bar of judgment.[1]

There was great promise of a reduction of the amount of mere clerical work, but that has been added to enormously; and in some places it seems to have been reduced to a degree of childish, but most provoking absurdity, not so much from these Regulations as from local practice. About this there is really no use whatever in complaining. Not only here, but in far greater concerns, the country has been handed over to a set of clerks with souls no larger than that of a scribe; and until the sharp medicine of some terrible calamity comes to purge them away, we need not look for any higher effort than is required for the invention of "returns," and for the subsequent accurate interment of them in pigeon-holes. We are possessed by a legion of War Office clerks, and that legion will require the exorcism of some great calamity to drive them out. These gentlemen have lately formed themselves into a regiment of soldiers; and it would be a very good plan, when the catastrophe does come, to treat them as David treated Uriah the Hittite, and to place them in the forefront of the hottest battle. If the result was the same, the public would have much reason to rejoice.

There are two or three matters which we must defer the consideration of until more is known about them. There is the examinations for promotion, which have just been commenced, and which have caused no little fluttering of the medico-military dovecots. There is the medical school, which has just acquired a local habitation, and which was opened on the 2d ult. The walls are not yet dry, and the school is just opened; and already it must be asked whither it is to take flight when the Chatham hospital is abandoned, as it soon will be. There can be but one proper place for it, and that is at the new General Hospital, wherever that is to be; but the question seems to be unsettled.

These, and some other matters, we must reserve for some future occasion. Meantime, let us say again that these Regulations are good in intention. To make them good also in fact and practice is for each one in his own sphere of honest and conscientious duty. When middle-age overtakes one in her Majesty's service—middle-age, with its narrowing vista and its most unsatisfactory retrospect —and when one feels, as one is so very apt to feel after some years so spent, an utter weariness of soul and an utter barrenness of mind, then does one sigh for and look forward anxiously to the day which is to bring 18s. 6d. and Liberty,—a modicum of half-pay which will keep out the cold and provide a sufficiency of bread and tobacco, and a state of existence in which "Medical Administration" is unknown. The very best thing that can be said for the book now before us is that it goes far to enable any one who is looking for that happy day to provide for himself something which is far better, more substantial, and more lasting than anything that this noisy, talking, foolish world can give,—the being able to say, when the twenty-five-years-long journey is over, I HAVE DONE MY DUTY.

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[1] If any one wishes to know how Statistics should be entered into, let him read Dr Greenhow's and Dr Sanderson's Reports on Diarrhœa and Diphtheria, which are given in Mr Simon's recently published Annual Report for 1859; or, still better and more to the point, let him study the three papers on Hospital Statistics which were presented to the late Statistical Congress.

Diseases of the Heart; their Pathology, Diagnosis, and Treatment. By W. O. MARKHAM, M.D., Fellow of the Royal College of Physicians, etc., etc. Second Edition. London, 1860.

WHEN the first edition of this excellent work made its appearance, four years ago, we cordially recommended it to the attention of our readers. We are glad to find that its reception by the medical profesison has been so favourable as to render a second edition already necessary.

The present volume differs considerably from its predecessor, having, as Dr Markham informs us, been thoroughly revised, and in some parts rewritten. In general, books expand as they go through successive editions; the volume before us, however, constitutes an exception to this rule, as it contains no less than seventy pages fewer than the first edition. Still, notwithstanding this diminution of bulk, nothing of importance has been omitted, while a good deal of interesting matter has been added; space having been gained by the omission of an introductory chapter, and by judicious curtailment at various places. We can only notice one or two points where alterations or additions have been made.

The chapter on the Treatment of Pericarditis has been considerably shortened, and at the same time much improved, the practitioner's line of conduct being more clearly and unreservedly stated than in the first edition. Dr Markham recommends the alkaline treatment, combined with opium, blisters, and fomentations. We extract the following judicious observations on general and local bleeding:—

"Experience has shown us, that venesection has no directly beneficial influence over pericarditis; and that large bleedings are prejudicial, and therefore inadmissible in this disease. Nevertheless, that small bleedings are often of very great service in relieving the congestions of the heart and lungs, which so often arise as consequences of and coincidently with the pericarditis, is, I think, an undoubted fact. I have elsewhere spoken of this particular mode of action of venesection; and if the conclusions ("Remarks on the Uses of Bleeding in Diseases"—*British Medical Journal*, 1858) there arrived at are, as I firmly believe, correct, it necessarily follows: that moderate venesection, practised for the object indicated

—viz., to relieve the congestion of the heart and lungs—may be often resorted to with great benefit to the patient.

"In all stages of diseases of the heart in which congestion of the organ occurs, such venesection—duly adapted to the individual case —is of great service. I consider that I have even seen life preserved by timely abstraction of blood in cases of chronic valvular diseases of the heart, where the organ was so overwhelmed and labouring as to render death imminent.

"*Local abstraction of Blood.*—Whenever pain on pressure, or on inspiration, exists about the præcordial region, during the early periods of the pericarditis, there can be no doubt as to the propriety of taking blood, by bleeding or cupping, from that part. The blood is, in such case, drawn directly from the inflamed pleura (through the intercostal arteries), which always co-exists with severe pericarditis, and, probably, from the inflamed pericardium, through the anterior mammary artery."

Much attention has of late years been directed to the obstructions to the circulation, occasioned either by the impaction in arteries of portions of fibrine or fragments of vegetations, or from the spontaneous coagulation of the blood within the heart and blood-vessels. As Dr Markham's remarks on this subject do not occupy much space, we give them nearly entire:—

"Fibrinous deposits occur in the arteries, the veins, and the heart, but their most ordinary seat is in the heart. That they are frequently formed during life is certain, and that they are occasionally the immediate cause of death is also certain. Sometimes the deposit gradually accumulates in one part, and so at length arrests the circulation there; sometimes, but more rarely, the fibrinous mass thus formed is carried along in the current of blood, and, being arrested in its course, blocks up the flow of blood to some organ, the brain it may be, or the lungs. The right auricle is the most favourite seat of these formations in the heart. They always have mechanical attachments more or less firm to the walls of the organ; and are of more or less firm consistence, according to their age. From the deposit, prolongations often pass onwards in the stream of the blood, preventing the proper action of the valves, and blocking up more or less completely the arteries into which they reach. Dr Richardson first pointed out the fact, that these fibrinous deposits sometimes assume a cylindrical form in the arteries and infundibular portion of the heart and ventricles.

"It must not, however, be forgotten, that fibrinous deposits may form in the arteries, where they are found; for the same causes which excite a deposit of the fibrin in the larger branches of arteries, or in the heart, may equally operate in the smaller branches. It is not necessary, therefore, to suppose that in all cases where vessels of the brain or of the lungs, for instance, are found to be filled with fibrin, that some portion of fibrin has been carried from the heart or elsewhere, and being at length arrested in its course, in a vessel too small to give it passage, has there acted like a plug, and so caused the deposit of fibrin or coagulation of blood behind it. There can be no doubt, that such sudden local arrestments of the circulation do occasionally result from small portions of fibrin—emboli—thus carried along from one part of the vascular system to another; but obstructions from this cause are, I believe, comparatively rare.

"The symptoms depending upon the formation of clots in the heart differ according to the situation of the clots. When they obstruct the circulation through the right side of the heart, the return of blood from the systemic veins is prevented; the blood does not pass to the lungs for aëration, and, consequently, arterial blood is not supplied to the different organs. Death consequently results, in such case, rather from syncope than from asphyxia. There is also something very remarkable in the extremely painful "cardiac" kind of dyspnœa which attends this affection; it differs from all ordinary kinds of impeded respiration. The formation of the clot in the left side of the heart is indicated chiefly by signs of extreme congestion of the lungs—of ordinary congestion of the lungs, expectoration of mucus and bloody frothy mucus. In this case, if the patient dies, it is rather from coma than from syncope. Of course, also, there are cases in which clots are formed during life in both sides of the heart.

"Of the physical signs attendant upon the formation of clots in the heart, there are none that can be considered as specially pathognomonic. The sudden appearance, however, of a murmur, in cases where no signs of endocarditis existed, and where the symptoms are indicative of formation of a clot, may be considered as an almost certain sign of the fact."

Two interesting cases, illustrative of these observations, are contained in an appendix.

Advice to a Mother on the Management of her Offspring. By Pye Henry Chavasse, F.R.C.S. Fifth Edition. 12mo. John Churchill, London.

A New and Rational Explanation of the Diseases peculiar to Infants and Mothers, with Obvious Suggestions for their Prevention or Cure. By Thomas Ballard, M.R.C.S. Eng., L.S.A., etc. 8vo. John Churchill, London.

The little work first mentioned is one probably not unknown to some of our readers, it having now attained the honour of a fifth edition. The style adopted by the author is that of question and answer; and as the very first question and its answer will convey a good idea of the class of readers for whom the book is intended, and the kind of remarks intended for such readers, we shall quote them at once.

"*I wish to consult you on many subjects, appertaining to the management of children: will you favour me with your advice and counsel?*

"I shall be happy to accede to your request, and to give you the fruits of my experience in the clearest manner I am able, and in the simplest language I can command, freed from all technicalities. I will endeavour to guide you in the management of the health of your children; I will warn you of approaching danger, in order that you may promptly apply for medical assistance, before illness has gained too firm a footing; I will instruct you in the *immediate* employment of remedies in case of accidents, where delay may be death; I will tell you how a sick child should be nursed, and how a sick-room should be managed; I will use my best energy to banish injurious practices from the nursery; I will treat of the means to prevent disease, where it be possible; I will show you the way to preserve the health of the healthy, and how to strengthen the delicate; and I will strive to make a medical man's task more agreeable to himself, and more beneficial to his patient, by dispelling numerous errors and prejudices, and by proving the importance of your *strictly* adhering to his rules. If I can accomplish any of these objects, I shall be amply repaid by the knowledge that I have been of some little service to the rising generation."

Now, it will be observed that this is rather an extensive enterprise in which Mr Chavasse proposes to embark; and the amount of letterpress required to do it justice, seems little to have needed eking out by the ever-recurring questions, unavoidable in the catechetical style he has chosen. Queries, conundrums, riddles, fables, parables, allegories, have indeed, from time immemorial, occasionally served as a most impressive mode of conveying instruction; and no doubt, in the present case, if mothers could thus fix in their recollection those solutions supplied for the problems with which they are here instigated to challenge physicians, the progeny would be placed in unusually auspicious circumstances. But the employment of such a system needs circumspection; if it has advantages, it has disadvantages as well. The matter-of-fact train of thought becoming in the perusal of subjects so important, runs considerable risk of being disturbed by the remorseless manner in which the mother is necessarily represented as returning to the charge, after each response of the medical attendant,—his utter discomfiture, supposing him mortal, seeming momentarily imminent; while the consciousness that such dialogue is, after all, mere imaginary twaddle, produces a quasi dramatic effect far too simpering and fantastic for a medical treatise.

Apart from this, however, most of the questions themselves are interesting and important, and of a really practical nature; some are even of so knotty a character as to be by no means child's play to the ordinary run of practitioners; while one or two might without discredit stagger the highest authority in matters of the kind. "*Have you any remarks to make on boys' waistcoats? What are the causes of so many young ladies of the present day being nervous and unhappy? Are you partial to puddings for children? Have you any objections to pork for a change? Suppose there is nothing on the table which a child may eat with impunity?*" are questions, irregular, and somewhat intricate; but they are of a kind medical men may possibly be expected to answer sometimes, and with reflection on which a few of their leisure moments might by some be demanded to be filled up,—rational medicine of the present day comprehending, as is well known, a sort of general superintendence of everything, from psychology and imponderables down to crinoline or bitter beer. Opinion, however, varies so much on matters involving mere principles of taste, sect, economy, and the like, that a physician treads on ticklish ground when he enters on their discussion at all, with an already obstinately prejudiced and argumentative matron. And it will, therefore, generally be found admitted on both sides, that such questions as these, are, upon the whole, best left open to individual choice or peculiarity.

With such trivial objections as to style, however, the subject-matter is, we repeat, good and well treated. The fact of so many editions being reached, speaks volumes for any work; and of this one we can add, that it contains much information to be got nowhere else in the popular or the collected form here presented.

The other treatise is one of an entirely different description. Taking a flight far above the mean capacity of non-professional readers, its purport promises to illuminate certain dark sources whence issue those mysterious ailments peculiar to early infancy and the puerperal condition. We scan its pages, and are taught that children are recklessly exposed to light while sleeping in the daytime—they, moreover, ever and anon suck fruitlessly—*hinc illæ lachrymæ.*

The first of these misfortunes—exposure to light—Mr Ballard sets down as the principle, if not the sole cause of infantile ophthalmia; his remarks being originally contained in a paper headed, "On Light the only Cause of Purulent Ophthalmia of Infants." From this sweeping conclusion, however, we must demur, and that on two apparently good grounds,—First, because this disease is commonest in those children whose homes are in localities where light is scarcest; and, secondly, because it nearly always occurs at that age when the child is least of all exposed to light—viz., before the fifth or sixth day of life, and while the child sleeps in its mother's or nurse's arms—almost altogether shut out from the sun. Whether the light *ever* is a cause of the disease, is a question upon which we need not enter.

The second great *fons et origo mali* is one which, no doubt, has sometimes occurred to us as probably being rather a thorn in the earlier walks of life, viz., fruitless sucking, as our author terms it; but it has been reserved for him to demonstrate it as the great centre or pivot on which turns the whole hygienic fate both of mother and child. Like other great ideas, however, this one seems to harmonize with and be supported by several beautiful and touching, although humble and unmarked, incidents in the book of nature.

"The fatal effects," says Mr Ballard, "of fruitless sucking are not limited to the offspring of the human species; the lower animals afford us many examples of it. The scour is a very common disease of calves, and is frequently fatal. I have obtained from a friend the following particulars of the death of a calf, which has recently occurred. The cow's udder being swollen and hard, shortly after the birth of the calf, it was supposed that there was an excessive secretion of milk; and, in consequence, four gallons were stated to have been taken daily from the cow for the use of the dairy. The calf suffered with the 'green scour,' which afterwards became the 'bloody flux,' of which it was said to die when only ten days old. The cow was then very ill, the udder being inflamed and the teats sore, but she recovered soon after the death of the calf. It is obvious, in this instance, that the milk which should have nourished the calf was taken to the dairy; the udder of the cow could not have been expected to secrete much more. The calf, in obedience to its instinct, sucked for its food, but fruitlessly, and no doubt forcibly, and for long periods; its stomach responded to the excitation of the nerves of taste, and poured forth its gastric juice as a reflex secretion, which, not meeting with sufficient food to neutralize its solvent powers, was carried on through the intestines, softening and corroding them in its transit, and thus producing the symptoms of green stool diarrhœa and dysentery, but known to farmers as 'green scour' and 'bloody flux.' I am also informed that twin calves usually die of the scour.

"A pork butcher informs me, that frequently in a litter of pigs there is one called the 'darling pig,' and so called because it is always sucking; it does not grow in the same proportion as the others, and usually dies of the 'green scour.' This unfortunate little creature is one too many in the family; the sow has not room for all to feed at once, therefore one must take its turn after the others have done; but the others so thoroughly exhaust the fount, the 'darling' has to be continually sucking to get even a little, and thus engenders its own death by the operation of a natural law, to the existence of which it is my present endeavour to call attention; for, by its recognition, the lives of thousands of young creatures may be preserved, and many parents saved the pang of witnessing the gradual sinking of their tender offspring without being able to arrest it."

This is indeed a "consummation devoutly to be wished." Formidable a disorder, however, as the "green scour" may be in a family—more especially in one where the "darling pig" is occasionally represented, as in triplet or even twin-producing households

—we cannot see that unsuccessful sucking should extend its effects further than as a cause of gastric irritation, defective nutrition, or even that softening of the coats of the stomach so well known to occur in early infancy, and which has been ascribed to several causes of the kind: something, however, besides mere "fruitless sucking" generally here exists. Again, puerperal diseases are by Mr Ballard attributed to its influence. Now, is this not very like mistaking cause for effect altogether? In a word, we should say that where sucking is fruitless—the art not being one difficult to attain—either the mother's condition is to blame,—some puerperal lesion has existed previously, exists as the cause and not the effect; or some defect must originally attach to the child, in which case fruitless sucking would no doubt be a cause of evil; but, in either case, the results would simply be those consequent on suppression or overabundance on the part of the mother, and of deprivation on that of the child.

We looked for a "new" explanation of the diseases peculiar to mothers and infants. This can scarcely be called so, however "rational" it may be. The title of the work implies an addition to our stock of knowledge of something new and perennial; as it is, the stores already possessed have only been lighted by a flash—startling but evanescent.

Reports in Operative Surgery. Fourth Series. By RICHARD G. H. BUTCHER, Esq., Surgeon to Mercer's Hospital, Dublin.

IN this pamphlet of forty-three pages we have the records of eleven cases requiring surgical interference. The two first are of special importance, as they show how extensive portions of the facial bones may be removed by skilful hands through very limited incisions. In the first case Mr Butcher removed the whole upper jaw after a single incision into the nostril, dissecting up the ala and the cheek, as advised by Mr Ferguson. "Three weeks after the operation there was so little deformity, that a medical gentleman asked from which side the jaw was taken." In another case the author was equally successful; and, in a third, satisfied himself with dragging the cheek upwards from the lip after division of the maxillary connections.

The remaining cases, principally complicated hare-lips, are well worth the study of practical surgeons, as indeed are all Mr Butcher's writings.

Part Third.

PERISCOPE.

MEDICINE.

DOUBLE BLOWING MURMUR OVER THE BASE OF THE HEART, WITHOUT VALVULAR DISEASE.

M. Eugene Fournier brought before the Society of Biology of Paris the following case:—On *post-mortem* examination of a patient who had died at the Hôpital Beaujon, under the care of Dr Gubler, ossification and several atheromatous patches of the aorta were met with, along with hypertrophy of the heart. The valves were healthy, with the exception of slight indurations of those of the aorta, which, however, were not insufficient, or which at least did not permit the escape of water poured down the vessel.

During the life of the patient it had been noticed that the pulse was intermittent; on auscultation of the heart, a double blowing murmur was heard, the second of which was very loud, had a well-marked metallic character, and could be heard at a little distance from the wall of the chest. On this bruit was founded the diagnosis of aortic insufficiency, but on *post-mortem* examination the aortic valves were found competent. On examining the inner surface of the aorta, a cretaceous patch was found, which projected into the vessel, could apply itself to the wall of the artery during the passage of the blood propelled by the contraction of the ventricle, and could rise up when the current passed in the opposite direction. The murmur with the second sound had been attributed by M. Gubler to the vibration of this patch at the moment when the column of blood fell back upon the sigmoid valves.

M. Marey remarked, in the first place, that the specimen presented by M. Fournier was an example of hypertrophy of the heart occasioned by a mere induration of the aorta, the loss of elasticity of the vessels producing increased resistance to the passage of the blood, as had been proved by experiment. As to the blowing murmur with the second sound, he could not admit the explanation that it had been caused by the vibration of the calcareous plate produced by the retrograde current; in fact, at the point where the patch was situated—a point very near the aortic orifice—there could not be a retrograde movement of the blood without valvular insufficiency; and if there was insufficiency, it was useless to look for an explanation of the murmur in any cause but the insufficiency itself.

M. Gubler had previously observed cases of the kind, in which the aorta, being ossified, and presenting cretaceous patches, bruits of a similar character to that above described, although less intense, had been observed, and when examination after death had found the aortic valves competent.

M. Vulpian had seen cases of the same kind. M. Cruveilhier had also published some similar observations, in which, however, projecting patches had not been found, but a simple ossification of the aorta, which had given rise to this blowing murmur. The valves were found natural, and the heart hypertrophied. The cause of these bruits is, therefore, still to be ascertained, for they are not explained by the ordinary mechanism of the circulation.—*Gazette Médicale de Paris.*

FISH-BONE IN THE ŒSOPHAGUS, PERFORATING THE DIAPHRAGM AND HEART.

With regard to the following example, we may remark that, although it was briefly mentioned in some of the daily journals, it presents so many points of interest that it is well worthy the attention of the profession. The previous history was, unfortunately, very obscure. The woman was a hawker by trade, and had no fixed dwelling-place, but wandered here and there according to the calls of business. Not even her name or age could be ascertained. On the day of her death, however, as appears from the evidence of a casual witness, she suffered from severe pain in the chest, accompanied by a feeling of faintness, which compelled her to rest on a door-step, whence she was removed to University College Hospital. On admission, she was warm, but life was quite extinct. The *post-mortem* examination, which was made as soon as the coroner's order could be obtained, showed the following lesions:—On removing the skull-cap, the brain, with the exception of presenting an almost empty condition of its blood-vessels, was normal, and its substance firm and consistent. The thorax next being opened, the pericardium was at once seen to be distended and bulging from contained fluid—namely, one pint and a half of blood. No clots were found; but passing in every direction from the surface of the heart to the pericardium, but especially from the front, was a net-like arrangement of cords, apparently consisting of fibrine, and resembling in appearance the thread-like mass obtained by whipping blood with a bundle of twigs; it did not at all simulate the locular honeycomb or thread-like exudation of lymph which is seen in some cases of pericarditis. The blood being all carefully removed by a syringe, the heart was found small and contracted, but no rupture of its surface or of an aneurism connected with it could be detected. A very minute examination was now made, when, on passing the finger along the posterior surface of the pericardium, it came in contact with a sharp foreign body, which evidently had transfixed the membrane. On lifting the heart up, a jagged wound could be readily detected on its posterior surface corresponding with the point of the foreign body, and situated on the septum, its middle part, and immediately over the descending branch of the right coronary artery, with its accompanying vein; the latter it had punctured: this was afterwards proved by dissection, and by injecting the coronary artery, when the fluid returned by the veins, and poured out of the torn one, but not out of the artery. To render the further dissection more easy, the whole contents of the thorax, together with the diaphragm, stomach, and liver, were removed *en masse*. The stomach was then opened, and the contents being removed, the foreign body was found to be a fish-bone, the blunt end of which projected into the cavity, while the other portion had pierced the wall close to the cardiac end of the œsophagus (a stitch was at once introduced to keep the bone in its exact position); it had then passed through the diaphragm and pericardium, causing some slight extravasation of blood between these tissues; and lastly into the substance of the heart, as before mentioned. The cavities of the heart were quite empty—not even a clot could be found; neither of these had been opened by the external wound. As to the other organs, the lungs were bound down by old pleuritic adhesions, but otherwise healthy; so likewise the liver, kidneys, and intestines. Amongst the contents of the intestines were found two or three fragments of fish-bones, probably of the same kind as the other, but discoloured and partially digested.—*Lancet.*

CONCRETION IN THE VERMIFORM APPENDIX.

H. Guy, aged 12, was admitted into King's College Hospital, under the care of Dr Budd, on May 23, 1860. Four days before admission he was attacked with violent griping in the abdomen, was drawn double by the pain, and rendered incapable of standing upright. This continued throughout the day and following night; on the next morning vomiting occurred, and a dose of castor-oil was followed by several watery evacuations. Two days before admission, an enema was administered, with the effect of bringing away some dark feculent matter, followed by clotted blood. Several evacuations after this contained blood. When first seen after admission, he wore a wearied and anxious expression, and lay with his knees drawn up in the bed. The whole abdomen was painful and tender on pressure. The breathing was thirty per minute, chiefly thoracic; coughing caused great pain. There was a good deal of fever; the tongue was dry, and of a curious mottled appearance, caused by spots of sordes on a dark red ground. Pulse 113. He was ordered two grains of compound soap pill three times a day, and to have an enema of a pint of oatmeal gruel. A linseed-meal poultice was applied to the abdomen. The enema was retained; no motion ensued. Vomiting occurred at intervals of about half-an-hour. He could procure no sleep. The enema was repeated on the following day, but no action of the bowels occurred, and the vomiting soon became constant; the pulse became smaller and harder. The belly was kept well fomented. May 25—He became weaker, and could speak only in a whisper. Early in the morning some thin watery motions were passed; from that time the purging was incessant, vomiting also continuing. He became much more exhausted; purging ceased about ten o'clock on the night of the 26th, and vomiting decreased in frequency. He died rather suddenly on the 27th, vomiting of coffee-ground matters having been incessant before death. On incising the walls of the abdomen, a quantity of pus was seen lying between and upon the intestines. The visceral peritoneum was much congested, being, over the lower part of the small intestine, of a deep purple colour. The vermiform appendix was purplish-black; it was perforated in four places, and was almost entirely in a gangrenous state; in it was impacted a concretion of about the size and form of a date-stone. The contents of the bowels had not escaped into the abdominal cavity. On microscopical and chemico-microscopical examination of the concretion, I found it to consist of phosphate of lime, carbonate of lime, and ammoniaco-magnesian phosphate, surrounding a nidus formed of interlacing vegetable hairs—evidently hairs of the oat.

Remarks.—Oat-dust has a peculiar property of "felting" or moulding into masses. Dr Hughes Bennett remarks, that the formation of such concretions as these has become more rare of late years; partly because, since the employment of winnowing machines, the separation of the fibrous dust from the meal has been more perfect; partly because the consumption of animal food has become relatively greater. The question as to the origin of the concretion in the present instance is answered in a very curious manner. On questioning the mother of the boy, I elicited that he had been in the habit of buying and eating the very coarse plum-pudding which is sold in the neighbourhood of this hospital. I sent a little boy of his own class to purchase some of a similar kind, and bring it to me. On examination by the microscope, I found it to contain hairs having identically the same appearance as those which formed the bulk of the concretion.—*British Medical Journal.*

ON THE SOLVENT POWER OF GLYCERINE.

The solvent power of glycerine is in general between that of water and alcohol, and generally substances may be said to be more soluble in glycerine the more they are so in alcohol. A high temperature greatly increases its solvent power. The following statement shows some of the more important chemical substances freely soluble in glycerine: iodine, iodides of potassium, iron, and sulphur, sulphurets of potassium, and calcium, biniodide of mercury, corrosive sublimate, sulphate of quinine, tannin, salts of morphia, veratria, brucia, atropia, and tartar emetic.

TEST FOR THE GOODNESS OF FERRI PULVIS.

When well prepared it will burn on the application of a lighted taper, and a small portion of it struck on an anvil with a hammer, forms a scale having a brilliant metallic lustre.—*Chemist.*

COMPOSITION OF CHLORODYNE.

The *Medical Circular* gives the following authentic statement of the composition of chlorodyne—a preparation which has hitherto been a mystery to the profession—as furnished to it by Dr Ogden of Manchester.

℞ Chloroformyli, fl. ʒiv.
Sp. Ætheris Chlorici, fl. ʒij.
Morphiæ Hydrochlor., gr. viij.
Acidi Perchlorici, gtt. xx.
Olei Menthæ Piperitæ, gtt. ij.
Tr. Capsici, fl. ʒss.
—Cannabis Indicæ, fl. ʒj.
Acidi Hydrocyanici, gtt. xij. (Scheele's).
Theriacæ, ʒj. Misce.

The treacle is to be held over a spirit lamp until the fluid or watery part is evaporated, and is then to be rubbed up in a mortar with the chloric ether and tincture of capsicum until intimately mixed, when the other ingredients may be added, and the whole shaken for some time in a phial.

TREATMENT OF DELIRIUM TREMENS BY LARGE DOSES OF DIGITALIS. BY MR G. M. JONES, SURGEON TO THE JERSEY GENERAL HOSPITAL.

About twelve years ago, I was called to see a patient with delirium tremens, residing about a mile from my house, who was almost *in articulo.* I prescribed a dose of chloric ether with tincture of opium ; but the wife, who came for the medicine, took, by mistake, a phial containing *one ounce* of tincture of digitalis. I discovered the error, and was horrified when I heard that the patient had taken this dose ; but no less surprised than pleased when I also heard that, instead of being poisoned, he was very much better. Under ordinary treatment, I fully believed he would have died ; but after this single dose he rapidly recovered. Profiting by this hint, I began to give digitalis in all the cases of delirium tremens which came under my care in hospital and private practice ; and during the last twelve years I have adopted it in at least seventy cases—this effect of drunkenness being very common in Jersey. As to the dose, experience has taught me that the best dose is *half-an-ounce* of the tincture given in a little water. In some few cases this one dose is enough, but generally a second dose is required four hours after the first. In some cases, but very seldom, a third dose is called for ; but this hardly ever need exceed two drachms. The largest quantity I have ever given was *half-an-ounce* at first, *half-an-ounce* four hours afterwards, and another *half-ounce* six hours after that—making an ounce-and-a-half in ten hours. As to the effects of these doses, my impression is that the action is on the brain, not on the heart. The pulse, so far from being lowered in force, becomes fuller, and stronger, and more regular, soon after the first dose. The cold clammy perspirations pass off, and the skin becomes warmer. As soon as the remedy produces its full effect, sleep for five, six, or seven hours commonly follows : sleep is the guide as to the repetition of the dose. No action on the kidneys is evidenced by any unusual secretion of urine. Sometimes the bowels are slightly acted on, but not commonly. I have never once seen any alarming symptom follow the use of these large doses of digitalis. The only case I have lost since adopting this treatment had a tumour in the brain. In three only was other treatment adopted after digitalis had failed to procure sleep ; in other words, in sixty-seven out of seventy cases, digitalis was the only medicine used, and sixty-six of these patients recovered. I do not mean that these are the exact numbers of those treated : I am certain as to the death, but I may have had more recoveries. I am well within bounds in saying seventy cases in twelve years, and that all of them were well-marked cases of delirium tremens. Slight cases of nervous derangement after drinking I have seen in great numbers ; but I speak here only of such cases as required active treatment. My previous experience of the results of the treatment by opium, or some of its preparations, by antispasmodics, etc., had certainly been much less successful ; the proportion of deaths was larger, and the recovery much less rapid. Again, I have treated more than one patient successfully by digitalis, who, in subsequent attacks elsewhere, has been treated by opium and died; and in many of the cases in which I have used digitalis successfully, opium had been previously given without any good effect.

I will only allude to one case in illustration:—On September 9, 1860, I was called to see a gentleman, 48 years of age, who was in a very alarming state, having been without sleep four days and nights, having been "muddled" for two months before, and having previously had "fits of the horrors." He had been treated by another practitioner by opium in moderate doses, but had become worse; and when I was sent for, it was the opinion of Mr Spencer Wells and Mr McCrea—who accompanied me in my first visit—that the case was as bad a one as *they* had ever seen; certainly *I* never saw a worse. The pulse was almost imperceptible; the skin covered with cold, clammy perspiration; the face deadly pale; the lips blue; the hands tremulously grasping the air; the eye expressive of great fear; the mind gone; he was muttering incoherently. With some difficulty I passed half-an-ounce of tincture of digitalis down his throat in the presence of my friends. In a few minutes he became more tranquil, the pulse was felt more easily, and we left him. After four hours I found that he had not slept, but he was rather more sensible, less tremulous, and warmer. I accordingly repeated the dose. Three hours after that, as he had been still without sleep, though in other respects improving, I gave two drachms more, making ten drachms in seven hours. After this he had some sleep, and had slept at intervals during the night. The next morning Dr Ballard saw him, with my other friends, and all of them were much pleased with the great improvement manifested. He was sensible, his fears had disappeared, he was very slightly tremulous; the skin was warm, the tongue moist, and the pulse full and regular at 90. The heart's sound and impulse were normal; the bowels had acted once; and urine had been passed in natural quantity. After this he took some broth, drank freely of imperial and lemonade; but took no stimuli of any kind, or any other medicine. He slept uninterruptedly for three hours and a half in the afternoon, and at intervals in addition. The next night was a good one; and when he was seen by my friends again the next morning he was almost well, and calling out for a mutton-chop.

I trust that this narrative of the results of my experience may induce others to follow what I believe to be a very valuable practical lesson; but I must warn those who do so, not to try, as I have done, any smaller doses than those I have recommended. They would not only lose valuable time by so doing, but I believe would do harm. Doses of half-a-drachm or a drachm do no good whatever; and the pulse, in some cases where I tried them, became intermitting. I have never seen this effect from the larger doses; on the contrary, a feeble intermitting pulse has generally soon become fuller and more regular,—proving, I think, as I said before, and as I again wish to impress on the profession, that the curative action is on the nervous system primarily, and not on the organs of circulation.—*Medical Times.*

MIDWIFERY.

DEATH, RAPIDLY FOLLOWING AFTER A NEARLY NORMAL LABOUR AND EMPLOYMENT OF CHLOROFORM.

Professor Faye of Christiania relates the following case:—"R. H., an unmarried house-servant, 35 years old, pregnant for the first time, and being about her full period, came into the hospital at nine in the evening of the 19th May 1859, the waters having newly escaped. She stated that she had been of delicate health in her childhood, without being able to give any particulars. Had menstruated copiously since her sixteenth year, and five years ago had a cursory attack of hæmatemesis; but had generally the look of a robust habit, although a degree of puffiness of the countenance and swelling of the legs gave indications of a not wholly sound state of the blood. The labour proceeded slowly, with transient pains, yet accompanied with rather acute suffering, from the afternoon, when the os uteri had scarcely begun to expand, till the morning, when it had attained the size of a half-dollar. A few hours later, the os was dilated, and the pains were more powerful and with longer intervals, the suffering accompanying them being very severe. The pulse was slow. She had chloroform in small quantities, to moderate the intensity of the pain without producing stupefaction. At two o'clock the head entered the superior opening, and passed somewhat rapidly into the hollow, with the smaller fontanel forwards and to the right. In the narrower portion of the hollow, the head remained stationary for several hours, although the uterine contractions were strong and painful. The forceps having been applied, the head of a living infant, a female weighing 8 lb. 2 oz., was delivered without difficulty; the operator, one of the assistants at the hospital, having, under my superintendence, allowed ample time for the intercalation of the bones of the head. After the application of the forceps, and during the extraction, chloroform was employed, producing anæsthesia of very short duration. From this she quickly regained full consciousness, without, as usual, lying for some time in a state of sopor. The pulse was 64. She slept for an hour. Later, she became more drowsy, with the face flushed; and at midnight, when visited by the assistant, the pulse was 92. She was easy, and quite conscious. At 4 A.M. she complained of a slight rigor, with headache and heat. There was no pain in the abdomen, which was soft, and without increased sensitiveness. Pulse 120. Afterwards she lay constantly as in deep sleep; but she could easily be aroused when directly addressed, and complained then only of weakness. At half-past seven the respiration became suddenly difficult and sonorous, the countenance livid, the second sound of the heart alone audible, and the pupils contracted. There was no convulsion, and no pain in the abdomen. The urine showed scanty traces of albumen. She was bled to 8 oz., but the blood was only obtained slowly. Cold applications to the head, leeches behind the ears, warm poultices and sinapisms to the legs, sinapisms over the cardia, with enemata, first purgative, and then containing vinegar, were now resorted to. At an earlier period she had quinine and bromine, according to a formula recently employed in the institution. Towards the forenoon she was still sensible when spoken to. She mentioned her home, and the father of her child, with the name she desired for it, etc.; remaining otherwise in a slumber, with short, but not laboured respiration. There was some *sibilus* heard posteriorly on auscultation. For some hours the pulse at the wrist was imperceptible, but the second sound of the heart remained clear and distinct, till she expired quietly at a quarter past twelve.

"The diagnosis in this case, where death had rapidly supervened within 17 hours from the period of delivery, leaned chiefly towards pulmonary apoplexy, or perhaps uræmia; the state of the functions of the brain not permitting the notion of any marked abnormity in the head.

"The body was opened 22 hours after death.

"*Cavitas cranii:* Nothing abnormal; no congestion. *Cavitas pectoris:* The lungs were firmly adherent in many places, through old pleuritic exudations. No coagula in the pulmonary arteries; nor, with the exception of slight congestion and œdema, anything morbid either in the substance or on the surface of the lungs. A few bronchial glands were greatly enlarged, and filled with caseous tubercular matter. The heart flaccid, its valves sound, and only a few small coagula in the right ventricle, of a dark colour and soft consistence. The endocardium, and inner coat of the great vessels, were stained by imbibition. *Cavitas abdominis.* The uterus well contracted, and otherwise normal; the peritoneum everywhere of healthy aspect, and cavity without exudation. In the left ovary a large *corpus luteum.* The liver of normal shape and dimensions, with a few extravasations of blood, some very small, and others more extensive, under the peritoneum at its convexity. The blood was dark and fluid. The surface of the substance of the liver was generally granular: on the left lobe, and at the margin of the right lobe, the granulations were from half a line to a line in diameter, and of a pale yellow; while upon the surface of the right lobe they were of a darker and more livid tint. The whole parenchymatous substance of the liver was firm, and consisted of the like granulations. In the hepatic veins the blood was dark and fluid. The capsule of Glisson appeared thickened. The spleen was of somewhat large dimensions, but normal. The kidneys were of ordinary size; but under the proper coat of both, which in places adhered firmly, there were extravasations of dark and fluid blood, partly capillary, and partly of greater extent. The surface of the kidneys was yellowish-grey and granular, and the veins dilated at several points. The cortical substance was finely granular and anæmic, and that of the pyramids somewhat congested.

"The left *labium majus* of the external parts, which, after delivery, appeared swollen and livid, contained a completely coagulated extravasation of blood, of the size of a hen's egg. The effusion proceeded to some distance along the left wall of the vagina. The pelvis was normal in form and dimensions."

Professor Faye, in a few concluding remarks, does not arrive at any positive decision as to the actual cause of death; which, however, he in so far attributes to the effect of the chloroform, that he admits for it collaterally the probability of a prejudicial influence.—*Norsk Magazin for Lægevidenskaben*, *Bind* xiii., p. 707.

SURGERY.

CASES OF RECOVERY AFTER SEVERE ABDOMINAL INJURIES.

At a meeting of the Boston Society for Medical Improvement, held on the 23d July last, Dr Jackson showed the iron portion of the pitchfork which he had recently received from Dr Edward F. Barnes, of Marlboro', in this State. The accident happened about seven years ago, in the practice of Dr B.; and the subject of it is now a stout, healthy young man, about 21 years of age. In ascending a hay-mow, with the fork in his hand, he lost his foot-hold, and in order to regain it, let go the fork, which slid down the mow first, and then he after and upon it. His father, who was near by, hearing his cries, ran to him and pulled the fork from his body. The prong that passed through him had previously been broken midway and afterwards mended; but it was not so strong as before, and consequently was somewhat bent at the time of the accident. The point came out about an inch to the left of the umbilicus. A small portion of the omentum, also, appeared at the wound, and, having been returned by kneading with the finger and the probe, it was confined by adhesive plaster. The intestines seem to have escaped all injury.

For the first two days the lad was kept quiet by opiates, and closely watched night and day, to prevent the least motion of the body. After this, the symptoms being much milder than could have been expected, greater freedom was allowed. The accident happened in the autumn, and Dr B. cannot say whether the lad went to school during the winter or not; he did no work, however, until the spring. During the winter, he complained of slight trouble in evacuating the bowels, but Dr B. has heard of nothing since.

Dr Jackson alluded to the number of fearful accidents that had occurred in this part of the country, as the result of sliding down from a hay-mow, and in which, so far as we can judge from the published cases, death seems to be the rare exception. Some of them, at least, are what the European surgeons would call "American cases," but there is not one of them of which all the essential facts were not well attested, if there is any dependence to be placed upon human testimony. Dr J. said that, though they had all (seven in number) been reported, and generally in detail, it might be well to give a brief analysis of these cases in connection, as it had never yet been done, for the sake of medical science, and, through the profession, as a caution to the farmers.

1. Case reported by Dr H. B. Burnham of Epping, N. H. (*Boston Medical and Surgical Journal* for July 12, 1860.) A man slid down from a hay-mow, and fell upon a rake-handle, which entered the scrotum, traversed the integuments, and came out in the right hypochondriac region. Recovery rapid.

2. Dr Joseph Sargent's case. (*American Journal of the Medical Sciences* for October 1853, and *Boston Medical and Surgical Journal* for December 11, 1856.)

A woman, aged 37, slipped from a hay-loft. A pitchfork entered the vagina, passed the whole length of her body, and fractured the first rib upon the left side; considerable ecchymosis just above the clavicle, after the accident. Recovery complete. Five years afterwards, Dr J. saw the woman with Dr S., and an irregularity of the united fracture was sufficiently marked.

3. Dr Peter P. Woodbury of Bedford, N. H. (*New England Journal of Medicine* for 1825.) A girl, aged 15, slid from a hay-mow. A cart-stake entered the rectum, and came out three inches from the left nipple, breaking three of the ribs, and projecting six or seven inches. In six weeks she went to school, and when the case was reported, the following year, she "enjoyed the finest health." This case was afterwards referred to by Prof. R. D. Mussey, in his lectures on surgery at Hanover, N. H., and the cart-stake shown. A model of this last is in the Society's Cabinet, sent by Prof. E. R. Peaslee of Hanover, with the statement that the girl died of typhoid fever about seven years after the accident.

4. Dr J. P. Maynard of Dedham, Mass. (*Boston Medical and Surgical Journal*, August 13, 1857.) A little girl, aged 11 years, slid down from a hay-mow and fell upon a hay-hook. The iron point and barb passed through the vagina, bladder, and peritoneal cavity, wounding the intestine, and making an external opening by the side of the umbilicus. The instrument was withdrawn as it went in, by Dr Stimson of D., who subsequently got possession of it, and presented it to the Museum of the Medical College, in this city. After the subsidence of the severe symptoms that followed the accident, Dr M. undertook the treatment of the fistula, and with so much success that in the course of the sixth week he discontinued his visits. The child played about out of doors, and to all appearances was sufficiently well, when a diarrhœa come on, and she died in about ten days, nearly eleven weeks from the time of the accident. A fistulous communication was found between the vagina and bladder, and between this last at the fundus and the intestine; also a portion of omentum between the rectus muscle and the external cicatrix.

5. Dr Zadok Howe of Billerica, Mass. (*Boston Medical and Surgical Journal*, March 11, 1840.) A lad, aged 15, slid from a hay-mow upon a hay-hook. It entered the perinæum and came out two inches from the umbilicus. Having been sawed across, the opening in the abdominal parietes was enlarged, and the iron-barbed rod, nearly fourteen inches in length, was drawn through the young man's body. In about three weeks he was dressed and walking about the house; and nine years after the accident, Dr H. stated to Dr J. that he continued quite well. The hay-hook resembles, essentially, the one referred to in the last case, a figure of which has been given by Dr M. Dr Howe says, "Quite a number of such cases have fallen under my notice; and I am constrained to add, that too many of them have terminated in death." He gives, however, two cases besides the above, and in neither of them, though the wound was deep, did the hook come out through the abdominal parietes; one of these last was fatal.

When case No. 2 was alluded to for the second time, Dr Coale gave an abstract of several foreign cases of impalement, and in most of which the patients recovered; four of the patients fell from a tree, and, by a singular coincidence, three of them fell upon a trellis.

6. In the *American Journal of Medical Sciences* for July 1850, Dr H. J. Bigelow published a case that has been referred to as an "American Case," at least once during the past year, in one of the large European capitals; the well-known case in which what may be called a short, but otherwise full-sized crowbar, passed entirely through a man's head—the individual not merely fully but rapidly recovering. Such a result would seem to be utterly impossible; and yet, all of the important facts in the case were most fully substantiated; and it may well challenge the whole records of surgery for a parallel. A few years ago the man passed through this city on his way to South America, and that was the last that we have seen or known of him.—*Boston Med. and Surg. Journal*, Aug. 23, 1860.

Part Fourth.

MEDICAL NEWS.

PROCEEDINGS OF THE EDINBURGH OBSTETRICAL SOCIETY.

January 25, 1860.

Dr Keiller, *President*, in the Chair.

I.—CASE OF LOCKED TWINS.

Dr Graham Weir read the following notes of a case of locked twins:—

H. C——, æt. 36, unmarried, admitted into the Edinburgh Maternity Hospital, September 8th, 1859. Legs œdematous, but no albumen in urine. Has had no children previously. Says she wants about three weeks of her time.

On September 29, she first complained of pain in the abdomen, and thought she was in labour; but, as the os uteri continued closed, and the contractions of the uterus could not be felt externally, it was concluded that they were false pains, and the patient was ordered a starch and opium injection. The anterior lip of the os uteri was swollen and tense, and the discharge had a distinctly fœtid odour. Fœtal heart heard distinctly both on the left and right side.

September 30.—Slept none all night; pains still continuing and more severe, occurring about every twenty minutes; os uteri still closed. The vagina was syringed out with tepid water, and an opiate given, after which she slept about six hours.

October 1.—Between 2 and 3 A.M., she sent for the house-surgeon, as she could not pass her urine. He introduced the catheter, and drew off more than a pint of urine. Pains came on about every ten minutes, and very forcible. The house-surgeon administered chloroform about 10 A.M. The os was then found to be very dilateable, and he dilated it easily to about 2½ inches. The head was found to be presenting, and was felt lying with the occiput towards the left acetabulum, while the left hand was lying behind the right ear. The sacrum was very prominent. On passing the fingers beyond the head, a second child was found lying with the face towards the neck of the first, the chin of the second resting on the top of the sternum of the first, and the occiput of the second on the pubes.

The house-surgeon waited for four hours, during which time the pains were very severe, recurring about every three minutes; but finding that the head of the first child did not advance, and the os being fully dilated, he diagnosed that the obstruction depended upon the position of the second head, retarding the descent of the body of the first child. He succeeded in dislodging the head of the second from its position, and moving it so as to make it rest on the abdomen of the first, and righted the position of the left arm, but found, two hours afterwards, that the head of the second child had again taken its former position.

In the evening, as the patient was becoming very restless, and the pulse quick and small, it became evident that nature could not effect delivery. I was accordingly sent for, and, after making a careful examination, also thought it impossible that labour could be terminated without assistance. Under my direction, the long forceps were applied to the head of the first child, while I myself raised up the head of the second, and kept it from descending till the head of the first had been drawn into the pelvis. Considerable traction was necessary to bring down the head, and, even after the head was born, to deliver the body. The cord was pulsating feebly when the child was born, but he was easily revived by repeated plunges in hot and cold water. About ten minutes afterwards the head of the second child took up its position at the brim, and as I thought it imprudent that the woman should remain longer in labour, I directed that the second child should also be delivered by means of the forceps. The placenta was single, and came away soon after with very slight hæmorrhage. The first child, a male, weighed 7 lbs., and measured 20 inches in length; the second, a female, weighed 6½ lbs., and measured 18 inches. Placenta, 2 lbs., cords, 15 and 20 inches. An opiate was administered about two hours after delivery. The patient slept for about eight hours, but the opiate had to be repeated every eight hours for four days after. Bowels moved on the third day; on the evening of the 5th ordered Tinct. Ferri Mur., 20 drops thrice daily. Discharge ceased on the ninth day.

On the morning of the eleventh she complained of pain in the left side of the throat, with difficulty in swallowing. A distinct swelling is seen extending from below the left ear, and over the left cheek as far as the middle of the neck. This swelling terminated in a parotid abscess; she was dismissed well on November 5.

II.—CASE OF INTRA-UTERINE SMALL-POX.

Dr Bruce showed a preparation of a fœtus about the sixth month, which had evidently suffered from an attack of intra-uterine small-pox; and read the following notes of the case:—

Last year Dr Alexander Simpson gave us the history of an interesting case of small-pox in the pregnant female, resulting in the disease being communicated to the fœtus in utero, and ending in its death and premature expulsion. Having lately met with a case of the same kind in my own practice, I have thought that a relation of the details might prove not uninteresting to the Society. On the 3d of May last, I was sent for to see Mrs G——; she complained very much of sickness, headache, etc., and next day, I believe, an eruption was observed on the face and arms which proved to be small-pox, and she passed favourably through a well-marked attack of the modified disease. She was considerably advanced in the pregnant condition, and had quickened some time previously. About the middle of May she ceased to feel any movements of the fœtus, and on my being sent for to see her about the end of May, I examined stethescopically, but could not detect the sounds of the fœtal heart. From this circumstance, and from her sensations which she described to me (a feeling of weight at the lower part of abdomen, etc.), I concluded that the fœtus was dead, and that premature labour might shortly be expected. Accordingly, on the 12th of the next month (June) I was sent for, and found that Mrs G—— was in labour; and on the evening of the same day she was delivered of a fœtus at about the sixth month. The case was a footling one, and the fœtus had evidently been dead for a considerable time. On examining its body I found, as I expected, the marks of small-pox in various places, which disease had without doubt been the cause of death. From a consideration of these dates, it would appear that the death of the fœtus had occurred about the middle of May (or perhaps a little further on, as she could not tell the exact date), when the mother was becoming convalescent from the disease. The fœtus, however, may not have been dead for some days after the cessation of its movements became apparent to its mother, as it might from the effects of the disease have become so enfeebled as to render its movements, if any were made, too slight to be recognised. The abortion took place on the 12th of June, three to four weeks after the death of the fœtus.

Dr Myrtle remarked that he had had a patient who was attacked with typhus fever in a very aggravated form when about four months pregnant. She was just recovering when she was seized with small-pox, in a form but slightly modified, although she had been vaccinated in infancy. Dr Myrtle thought the child must necessarily have died; but it was born at the full time, plump and healthy, and without any trace of having been the subject of any intra-uterine disease. It had to be vaccinated, however, twelve times before the vaccination finally took effect.

Dr Figg, of Bo'ness, had had a case nearly analogous, where, however, the pregnant female succumbed to an attack of small-pox, and almost in dying gave birth to a dead child, on which no trace of the disease could be detected. Mr Goodsir had even examined the skin microscopically, but no evidence could be found that the fœtus had been affected by the small-pox.

Dr Moir had also had a patient attacked with small-pox in a late stage of pregnancy. She gave birth prematurely to her child, which Dr Moir vaccinated the day it was born. The vaccinea took, and the child lived, and escaped the small-pox.

Dr J. Sidey had attended a patient who was seized with typhus fever when about five months pregnant. Her fœtus died then, but it was not finally expelled till the end of the ninth month.

Dr Keiller remarked that pregnant females attacked by acute febrile diseases, very frequently aborted. He had at present in the hospital a patient with typhus fever, who had aborted in this manner; and in his museum he had a preparation of a uterus containing the placenta of a child which had been expelled prematurely from a female who had been attacked with typhus fever, and died of the premature delivery, before the placenta had had time to separate.

Dr Keith stated, on the other hand, that he had a patient attacked with scarlatina at the seven month of her pregnancy, and yet the child was born alive and well at the full time. He had also attended a pregnant female through a severe attack of gastric fever, and she too gave birth to a living child at the normal period.

Dr Myrtle had a patient attacked with measles when pregnant. In that case the patient aborted, but the abortion was probably due to the severe cough from which the patient suffered, and which brought on uterine hæmorrhage, ending in abortion. It was near the full term of utero-gestation. Forceps had to be used for the delivery of the child, which was born dead, but the mother made a good recovery.

Dr Keiller had delivered a patient at the seventh month of twins, which died soon after. In that case, the patient had suffered from an attack of measles at the third month of pregnancy, but there was no evidence of connection between that attack of the mother and the premature birth of the children.

Dr Bruce had a patient seized with small-pox when about three months pregnant. The eruption did not come out well; the patient aborted, and afterwards sank and died. Dr Bruce had tried to vaccinate the woman, as small-pox was then prevalent, but the vaccination failed.

Dr Wilson had seen two cases where patients near the full term of pregnancy had been attacked with small-pox, and in due time gave birth to children who showed no trace of the disease, and were easily vaccinated. Dr Wilson had also seen a child born with marks of intra-uterine small-pox on its face and other parts of the body. The mother had passed through an attack of the disease shortly before. Vaccination of the child was attempted, but it failed.

III.

Dr Sidey gave an account of several individuals in one family whom he had tried repeatedly and carefully to vaccinate, but without effect.

IV.

Dr Keiller exhibited a tumour which he had removed from the anterior wall of the vagina. He intended to publish an account of the case.

V.

Dr Keiller also exhibited some small uterine polypi which he had removed by enucleation and avulsion.

OPENING OF THE ARMY MEDICAL SCHOOL.

The Army Medical School, for which temporary accommodation has been provided in some buildings of almost an unusual degree of unsightliness at Fort Pitt, Chatham, was formally opened on the 2d ultimo. The members of the Senate present were—the Secretary for War, the Director-General of the Medical Department, Dr Hume, and Professors Longmore, Parkes, and Aitken. There were also present the Commandant of the Garrison, the Commanding Royal Engineer, Dr John Sutherland, and many officers from the neighbourhood. Forty-three gentlemen who had qualified themselves, as probationers, for medical commissions in the Royal and Indian armies, and who had recently joined at Fort Pitt, occupied the audience part of the lecture-room. The inaugural address was delivered by Professor Longmore.

In a rapid historical sketch, Mr Longmore traced from a very early period the varying nature of the relations which had subsisted between our profession and the executive branches in the army, showing how a higher character had been given to the position of the surgeon, and how a greater degree of consideration had been accorded to him, just in proportion as the progress of the art rendered him more worthy of both. Coming down to the time when Mr John Bell was induced, by what he saw of the condition of the wounded after the battle of Camperdown, to urge the establishment of special means of instruction for the medical officers of both services, he described the different measures which had, from time to time, been taken in furtherance of that recommendation. He pointed out how very imperfect was the scheme which was given effect to, when the chair was established in the Edinburgh University for Dr John Thomson, which was subsequently filled by Sir George Ballingall. He alluded to the means of instruction which had been provided, some years ago, at Dublin, by the indomitable energy of Mr Jolliffe Tufnell; but he indicated an opinion that the class which that gentleman organized, and which was subsequently made a regius professorship, was open to all, or nearly all, the objections which opposed themselves to the Edinburgh chair. Adverting to a paper which appeared in this *Journal* in 1857, in which the question was raised—Is it advisable to institute chairs of Military Surgery? and in which, not without some hesitation, the question was answered in the negative, Mr Longmore gave a qualified assent to the reasoning and the conclusion arrived at, in consideration of the particular character in which, at that time, the question presented itself. He proceeded to claim for the school which was that day opened, that it offered an organization and an extended means of special instruction which removed the objections to which he had referred, and which gave every promise of being able to fulfil the intentions which had presided over its institution. He dwelt with much emphasis on the vast importance of its close connection with a general hospital which receives patients from all parts of the world, with an extensive and flourishing library, with a valuable museum, and with a large garrison. He took little note of the objections which have been stated to the form which the school has been made to assume; but to one of these objections—one which, in all probability, was present in the minds of every one of his future pupils,—that, being surgeons, they had been made to go back to school,—he replied with the transparent and hackneyed sophism, that we are all scholars, and are at school all our lives. Having specified the arrangements which had been made for the first session of the school, Mr Longmore concluded a well-sustained address, which had been listened to with marked sympathy and attention, with a statement of the points of improved status which had been lately accorded to Army Medical Officers, and by calling on his hearers to mark their sense of these advantages in the best of all ways,—by diligently and faithfully qualifying themselves for the important duties which would so soon devolve on them.

Mr Herbert then asked permission to say a few words on a subject in which he had always taken a deep interest, and with which "accidental circumstances," as he modestly phrased it, had intimately associated him. With a gracefulness of style which almost served to conceal the utter fallacy of the argument, and with a persuasiveness and winningness of manner which must have gone far to make his hearers forget how really offensive it was when addressed by a layman to that audience, he said that there is a broad distinction between "curative" and "preventive" functions in medical practice; that he really could not see how there was anywhere, out of the public service, a scope for the discharge of the latter function, or how a medical man could gain a livelihood by the practice of it. He dwelt with much emphasis on the vast importance of an attention to the means of prevention of disease in army practice; and instanced the condition of the army in China as an illustration of the happy results which may be always expected to follow when sufficient prominence is given to the preventive function. He said that on the previous evening he had been reading the Journal of the Adjutant-General in China, and that he had been much struck with a remark which he had found there,—that not only had the special sanitary officer, Dr Rutherford, done much good by his own exertions, but that these exertions seemed to have stimulated all others to similar happy efforts, each in their own sphere. Mr Herbert concluded by calling on the probationers to show themselves worthy of the advantages which were offered to them, as compared with their predecessors, by performing their future duties in such a way as would meet with and merit the approbation of that "public opinion" which had granted these advantages.

The proceedings were finally concluded by Dr Gibson, who stated that the future position of the candidates in the public service would be materially affected by the manner in which they severally acquitted themselves at the trials which they had passed through, or which were still before them; and who expressed a confident hope that they would justify all the expectations which had been formed of the zeal and assiduity with which they would address themselves to their studies.

All the day's doings seemed to pass off in the most satisfactory manner. The sun shone out as he had not shone, in the southern part of the island at least, for some six months, lighting up with his glory all the varied panorama that is to be seen from Fort Pitt. From that standing-point you see the old and the new brought together: grey and ruined history on one hand; on the other, ships being built, and bolts being forged for the committing of murder on the most advanced modern principles. But the objects of greatest interest which any true human soul could see that day, were the forty-three young human faces which were collected together; and to the respective owners of these we heartily wish all happiness and prosperity, a happy issue out of all their afflictions at Chatham, and an honourable and useful career afterwards. Like a certain young prince of whom they may have read at some earlier school, they have just escaped from the happy valley in the kingdom of Amhara. When their explorations and journeyings are over, they will find, alas! as did Rasselas, Prince of Abyssinia, that age does not perform the promises of youth, and that the deficiencies of the present day are not supplied by the morrow.

ROYAL COLLEGE OF SURGEONS.

At a meeting of the Royal College of Surgeons of Edinburgh, on the 17th October, the following office-bearers were elected for the ensuing year:—*President*—Douglas Maclagan, M.D. *Treasurer*—John Gairdner, M.D. *Librarian*—Archibald Inglis, M.D. *Secretary*—John Scott, W.S. *President's Council*—James S. Combe, M.D.; James Simson, M.D.; Andrew Wood, M.D.; Robert Omond, M.D.; Patrick S. K. Newbigging, M.D.; John Struthers, M.D. *Examiners*—John Gairdner, M.D.; James Simson, M.D.; Richard Huie, M.D.; William Dumbreck, M.D.; Archibald Inglis, M.D.; Andrew Wood, M.D.; Robert Omond, M.D.; P. S. K. Newbigging, M.D.; Benjamin Bell, Esq.; James Dunsmure, M.D.; John Struthers, M.D.; James Spence, Esq. *Inspector of Students' Course of Study*—James Simson, M.D. *Assessors to Examiners*—David Maclagan, M.D.; James S. Combe, M.D.; James Syme, Esq.; Samuel A. Pagan, M.D. *Conservator of Museum*—William R. Sanders, M.D. *Officer*—John Dickie.

UNIVERSITY OF ST ANDREWS.

MEDICAL EXAMINATION PAPERS, SEPTEMBER 1860.

First Examination.

FIRST PART.

Translation from Latin into English.

Give the origins or primary meanings of the following words:—Astragalus, blastema, condyle, cysticercus, hemiplegia, lithotrity, peroneal, and scaphoid.

SECOND PART.—CHEMISTRY.

1. Water boils at 212° F., and freezes at 32° F. Is this statement universally true, or only true under certain conditions? What are the corresponding boiling and freezing points in the Centigrade thermometer? Explain the method of converting degrees from one of these scales to the other. Reduce 100° F. to the Centigrade scale, and 256° C. to the Fahrenheit scale. In the Arctic regions would you prefer mercurial or spirit thermometers?

2. What compounds does oxygen form with carbon, hydrogen, sulphur, and phosphorus, and what are their respective formulæ?

3. Write down the formulæ expressing the composition of nitre, borax, alum, and corrosive sublimate, and explain the method of obtaining any two of these substances in a state of purity.

THIRD PART.—MATERIA MEDICA AND THERAPEUTICS.

1. Name the principal medicines which are commonly regarded as diuretics, and describe the modes in which they respectively act. Do these substances

increase the aqueous portion or the solid constituents of the urine, or both? What effect upon the solid constituents of the urine is produced by copious water-drinking?

2. Are you acquainted with any substances which have the power of checking the general metamorphosis or disintegration of the tissues? If so, describe them; and explain their mode of action, and the cases in which their administration may be of service.

3. Quinine is sometimes adulterated with one or more of the following substances—gypsum, chalk, boracic acid, sugar, starch, and salicine. How would you detect these impurities?

Supposing that any other acid had been mixed with hydrocyanic acid, how would you detect the adulteration?

How would you determine the strength of any given specimen of hydrocyanic acid?

4. What is the preparation of bismuth that is commonly used in Medicine? How is it prepared? What are its uses? Describe the symptoms which would lead you to prescribe it, and write a Latin prescription (without symbols or abbreviations) for a draught containing it.

Second Examination.

ANATOMY AND PHYSIOLOGY.

1. Describe the muscles which flex the leg upon the thigh.

2. What parts must be removed to expose the pterygoid muscles? Describe these muscles, noticing their relations to adjacent structures, the source from whence they derive their nerves, and their actions.

3. Describe the boundaries and contents of the axilla.—(N.B.—Candidates who prefer answering this question fully may neglect the two preceding questions.)

4. What are the respective numbers of the temporary and the permanent teeth? State, as nearly as you can, the period at which you would expect the different teeth to appear. Describe the structures which occur in the composition of a tooth. If you have studied comparative anatomy, you may describe the peculiarities of dentition in the ruminants and in the rodents.

5. Describe the appearance and structure of the villi, and explain the part which they are supposed to take in the process of intestinal absorption.

6. What are the different refracting media of the eye through which the rays of light must pass before they reach the retina? Explain how these different media modify the direction of the rays. What are the conditions giving rise to myopia and presbyopia? Explain the way in which glasses remedy these defects.

Third Examination.

(N.B.—In answering the practical questions, the Examiners require every candidate to specify the mode of treatment which he is in the habit of adopting, and the doses of the medicines which he prescribes.)

MEDICINE.

1. State what you know of the general doctrines of the hæmorrhagic affections, especially as to their origin, causes, nature, and varieties; and name the special hæmorrhagic affections.

2. Describe the general principles applicable in the detection of valvular disease of the heart, the diseases to which the valves of that organ are liable, and the means of detecting the particular valves affected, and the nature of the affection.

3. What advantages are gained by a selection of climate for invalids, what affections are likely to be benefited by such selection, and what climate would you select, first, for incipient phthisis; second, for chronic bronchitis in this country and abroad?

4. What are the different forms of lithiasis, and what treatment would you adopt in each?

5. A robust young man was seized, four days ago, with headache and shivering. He went to bed and slept well all night, but on the following morning was seized with pain (severe and stabbing) below right nipple; his pulse then became rapid, and skin hot. At the period of observation, pulse 108; skin pungently hot; tongue covered with a thick white fur; rubbing sound, with fine crepitation below right nipple. What disease does the patient labour under? What would your prognosis be? How would you treat such a case?

6. A patient, aged 50, is losing flesh and weight rapidly; subject to headache and palpitation; appetite voracious; urine plentiful; specific gravity 1·040; sample of urine turned claret colour by liquor potassæ. What is the disease, and how would you treat it?

Fourth Examination.

SURGERY.

1. What is iritis? What are its symptoms and diagnostic marks, the results if it proceeds unchecked, and the treatment?

2. What is hydrocele? Mention its varieties. With what other tumours of the scrotum might it be confounded, and state how it may be distinguished from them?

3. Describe the various forms of dislocation of the hip-joint.

4. Describe the process of formation of an aneurism. Mention the methods of treatment.

5. A man falls from a height on the top of his head, and is taken up insensible. On examination, no depression or other sign of fracture is found on the surface of the cranium. His breathing is laboured, and his eye is insensible to light. He remains unconscious, and his urine and fæces are passed involuntarily. At first blood, then watery fluid flows from the ear. Ultimately he dies comatose. What injury has been received? Explain how it has been produced; account for some of the most prominent symptoms. What appearances will probably be found on *post-mortem* examination?

Fifth Examination.

MIDWIFERY.

1. Mention the various circumstances which may make it proper to induce premature labour; and describe the different ways in which this may be effected, stating which you would prefer, and why so.

2. Recount the symptoms and signs of pregnancy, stating the circumstances which may in particular cases obscure the diagnosis.

3. What are the points in the history, the symptoms, and the physical signs of a case, which enable us to distinguish ovarian dropsy from ascites?

4. A woman, on the day after a very severe labour, in which turning had to be performed, had a rigor, which recurred from time to time during the next week, being always followed by perspiration, and accompanied by gradually increasing asthenic fever. Her pulse was extremely rapid and feeble, her tongue dry and brown, her skin of a dusky yellowish colour; the lochia were fetid, and the milk suppressed. She became very restless and sleepless, and died before the end of the fortnight, the region of the uterus having been only slightly tender on pressure. What was the nature of her disease, what the morbid appearances to be expected in the dead body, and what treatment ought to have been employed?

MEDICAL CONSTITUTION OF THE SPRING AND SUMMER OF 1860 IN FRANCE.

The *Gazette des Hôpitaux* contains the following interesting observations on the state of the weather and the prevailing diseases in France during the past extraordinary season :—

" If ever a season deserved the epithet of *anomalous*, assuredly it is the present one. The long and uninterrupted continuance of inclement weather, which dates from at least five or six months past, could not fail to affect sensibly the constitutional pathological state, and to produce, in the nature and physiognomy of the ordinary diseases of spring and summer, certain modifications in correspondence with the kind of influence usually exerted by the atmospheric conditions which at present prevail. Such, in fact, has been the case. The influence has not indeed been manifested by any well-marked medical constitution, nor by an aggravation in the number or intensity of the actual diseases ; far from it. The prevailing affections have presented rather a general character of benignity ; but they attest, by their unusual form for the time of year, the combined action of humidity and an almost constant depression of temperature. Some notion of this fact may be formed from the following account of the medical constitution of the last six months, which, according to his laudable custom, has been obligingly transmitted to us by Dr Thirion, of Gouhenans, in the department of the Upper Saone :—

" 'Spring was not ushered in under happy auspices. Indeed, the end of March was marked by inclemencies of all kinds : continual snow and rain, fog, showers of hail, and occasional peals of thunder. The prevailing wind was west, and blew with considerable violence. The mean temperature was + 7°·8 C. (46° Ft.). During April, the same meteorological phenomena were almost constant : rain, snow, hail, and frequent hoar-frost. The winds changed their direction, passing towards the north, where they remained fixed during the whole of the month. The mountains were still covered with a pretty deep layer of snow on the 26th. The mean temperature of the month was + 8°·6 C. (47½° Ft.). With the exception of a week of clear weather, during the whole month of May, rain, snow, or fog never ceased to darken the sky, creating a painful impression upon the economy and injuring vegetation, which was already extraordinarily backward. During the whole month the mean temperature was + 16°·1 C. (70° Ft.), and in the barometer the mercury oscillated between 765m,47 and 753m,45 (30·13 and 29·66 inches). Lastly, from the 1st June till the 21st, the weather was frequently wet, and the atmosphere embrowned with fogs, causing much coldness, especially during the night and in the morning. The winds, which for a brief time blew from different quarters, again became fixed in the north. The highest temperature was + 27·6 C. (81½° Ft.), and the lowest + 9° C. (48°·2 Ft.).'

" The diseases observed by M. Thirion during this atmospheric constitution were,—Catarrhal angina of the tonsils, some diphtheritic anginæ, simple bronchitis, and a pretty large number of inflammations of the chest, attacking both the lung and the bronchia, especially in children (capillary bronchitis), in whom this affection sometimes proved fatal. Several cases of pulmonary consumption became developed as a consequence of these attacks of bronchitis. Neuralgia and rheumatic affections were frequent, and often persons who habitually enjoyed good health became subject to these diseases. Lastly, under the influence of this constitution there appeared intermittent fevers, and cases of catarrhal conjunctivitis, which sometimes produced serious effects upon the mucous membrane.

" As the seasons are mutually dependent, it might almost have been foreseen that the summer would be injuriously affected by the cold, the damp, and all the vicissitudes of the spring. Accordingly, at its commencement, the summer season was not of irreproachable purity. There have been more days of fog, rain, and clouded sky than of calm or clear weather. There was a marked predominance of humidity, which, joined to a tolerably persistent north wind, made the nights and mornings chill. (Three mock suns, or Parhelia, lasting about an hour, were observed in the east on the 25th June, about four o'clock in the morning. The phenomenon is remarkable, because it is seldom seen in this climate, and occurs most commonly in winter during a north wind.) Several storms burst, but without much violence. The heat was never excessive. Once only the mercury rose to + 31° C. (87°·8 Ft.). The mean temperature of June was + 18°·8 C. (65°·8 Ft.). From the 1st of July to the 12th, the weather was tolerably calm; but in the morning the sky was frequently obscured by fogs, and the summits of the Vosges mountains were covered by mists. There was the same predominance of the north-west wind, which caused the barometer to rise to 766m,98 (30·18 inches). The temperature, which had scarcely been warm since the end of June, again became cold; thus, + 25° C. (77° Ft.) was its greatest height, and + 8°·5 C. (47° Ft.) its lowest point. Heat was never experienced during the whole of the remainder of July; there were even days when the temperature was not above + 7° C. (44½° Ft.), or + 6°·5 C. (43° Ft.). The mean of the month was + 18°·7 C. (65° Ft.). Rain, fogs, frequent hoar-frost, and passing storms,—such was the state of the weather from 12th to the 31st July. It was hoped that the month of August would witness the appearance of summer, but rain and fogs still continued. Numerous and thick layers of clouds, brought by the west and south-west winds, almost constantly intercepted the sun's rays, and, united with frequent showers of rain, could not fail to absorb a large quantity of heat from the air. Accordingly, the thermometer fell on one occasion to + 5°·5 C. in the morning (42° Ft.), and the mean of the first fortnight of the month was only + 16° C. (60°·8 Ft.).

"The summer, therefore, up till the beginning of September, having been constantly damp, and more often cold than warm, the prevailing complaints have been similar to those of the preceding season. Inflammatory affections of the mucous membrane of the air passages, extending occasionally to the substance of the lungs, some diarrhœas, intermittent fevers, many cases of rheumatism and neuralgia, were the most frequent diseases. But it is worthy of remark, in conclusion, that, in spite of the atmospheric anomalies of the past summer, no kind of epidemic disease made its appearance. Who can tell, in the present state of our knowledge, to what peculiar disposition of the atmosphere we owe this immunity?

"We should have little to alter in this description," adds the *Gazette*, "in order to represent the physiognomy of the medical constitution of Paris, and probably also of the greater part of France. But, in addition, for some time past in Paris there have been observed pretty frequent cases of intestinal disorders, resembling completely those of autumn, of which they seem to imitate, by anticipation, the ordinary pathological character. Accordingly, ipecacuan, the beneficial action of which in autumnal diarrhœas is well known, is at present attended with the best results.—*Gazette des Hôpitaux*, 1st Sept. 1860.

IRISH BRANCH COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

DISMISSAL OF THE REGISTRAR.

The Branch Council met on Monday, 6th August 1860.

Present:—Dr Stokes, in the chair; Dr Apjohn, Dr Corrigan, Dr Smith.

The minutes of the last meeting were approved and signed.

The Registrar not being in attendance,

Resolved—That Dr Smith be requested to act as Secretary to this meeting.

Read—A letter from Dr F. Hawkins, announcing, by direction of the President of the Medical Council, that William Henry Porter, Esq., had been chosen by the Royal College of Surgeons in Ireland to be a member of the General Medical Council. Also, that the Royal College of Surgeons of England had chosen James Moncrieff Arnott, Esq., to be a member of the General Medical Council.

Read—A letter from William J. McNiece, a registered practitioner, now residing in Canada West, complaining that he is not permitted to practise without a license from the Governor-General of Canada, which is to be obtained only by passing a fresh examination before one of the Medical Boards in Canada.

Ordered—To be referred to the General Medical Council.

Read—The following letter from Dr Maunsell, addressed to Dr Smith :—

"Branch Medical Council (Ireland),
"35, Dawson Street, Dublin, 3*d August* 1860.

"MY DEAR SMITH,—I have an engagement which will prevent me from attending the Council on Monday, as I had no notion that one would be convened. However, I have sent out the summons, and Mr Roney will attend for me with the minutes, and make any notes that may be required. Will you be so good as to make my excuses to the Council, and oblige yours truly,

"H. MAUNSELL."

Read—Letters of the 2d June and 20th July, addressed by the Registrar to the individual members of the Council :—

"Branch Medical Council (Ireland),
"35, Dawson Street, Dublin, 2*d June* 1860.

"DEAR SIR,—Referring to the resolutions, to give up this office and to dispense with the services of the clerk, adopted at the last meeting of the Branch Medical Council, I think it my duty, as the executive officer immediately responsible, to call your attention to the incompatibility of the proposed changes with the design of the Medical Act. That is clearly stated in the preamble to be, to enable the public to distinguish qualified from unqualified medical practitioners by a system of registration, for carrying out which a particular organization is provided by the creation of the offices of Registrars and Clerks. The Act also imposes penalties upon practitioners neglecting to register ; and it necessarily follows that there should be a convenient office where registration can be effected and inquiries made without delay or obstruction ; that the correctness of the Register should be secured by an elaborate system of checks ; and that the books and documents verifying it, should be kept in an exact and formal manner. These conditions cannot be fulfilled, or the proper duty of the Registrar performed, unless he be allowed the assistance of a clerk. But since my appointment I have, with that necessary assistance, performed not only my proper duties of Registrar and Secretary, but also those of Treasurer and Accountant—the former employment necessarily involving considerable loss during the hurry and confusion of the first year of the registration, and the latter including the keeping of a set of account books, and the preparing of half-yearly balance sheets under my superintendence.

"Under these circumstances, I beg leave to submit that the diminution of the expenditure of the Council cannot, with due regard to the requirements of the law, be effected by any reduction of the office expenses, which the funds at the disposal of the Council are amply sufficient to defray. The total amount of salaries and rent annually payable is L.430 ; while the sum appropriated to the six members of this Branch Council for the year 1859, amounted to L.926, 2s.

"I beg leave to say, in conclusion, that I have made these observations from a sense of public duty, my personal interest in the matter being at present very slight.—I am, dear Sir, yours truly, "H. MAUNSELL, *Registrar*."

"Branch Medical Council (Ireland),
"35, Dawson Street, Dublin, 20*th July* 1860.

"DEAR SIR,—As the order of the Branch Medical Council dismissing the Clerk comes into force this day, I beg leave to call your attention to my circular letter of the 2d June last, pointing out the inconsistency of that arrangement with the attainment of the main object of the Medical Act. I beg leave also to refer to the statement of the receipts and expenditure of this Branch Council for the half-year ending 5th instant, which shows that there is a sufficient fund available for the legitimate and very moderate expenses of the Registrar's office, which do not amount to half the sum absorbed by the six Irish Councillors during the year 1859. With regard to myself, I have only to say that the change that has been made is a breach of the conditions under which I accepted the office of Registrar, and undertook the very laborious task of organizing the system of registration.—I am your obedient servant,

"H. MAUNSELL, *Registrar*."

Resolved—That the Council must express their disapprobation of Dr Maunsell's absenting himself without the permission of the Council, and of his placing in charge of the office, without the sanction of the Council, a person whose engagement and surety as Clerk had terminated on the 20th of July last. The Council also taking into consideration the above letters of Dr Maunsell, of the 2d of June and 20th of July, addressed as circulars to the members of the Council, request Dr Smith to convene a meeting of the Branch Council for Monday next, the 13th, to determine what steps it may be advisable to take under the circumstances.

Resolved—That a copy of the foregoing resolution be sent by Dr Smith to Dr Maunsell by post, addressed to the office of the Branch Medical Council for Ireland.

D. J. CORRIGAN.

The Branch Council met on August 15.

Present:—Dr Corrigan in the chair; Dr Apjohn, Dr Porter, Dr Stokes, Dr Leet, Dr Smith.—Dr Maunsell, *Registrar*. The minutes of last meeting were approved and signed.

Resolved—That Dr Maunsell be requested to withdraw, and to remain in attendance during the meeting of the Council; but that previously to Dr Maunsell's withdrawal, he be requested to make any observations he desires, to the Council.

Dr Maunsell stated that he was the officer under the Act of Parliament, invested with certain powers, and liable to certain responsibilities; that he was not the servant of any member of the Council; that having his duty performed, he did not consider any permission for absence necessary; and that he would not remain in attendance.

Read—The following paragraphs from Dr Maunsell's letters of the 2d June 1860, and 20th July 1860:—

"Under these circumstances, I beg leave to submit that the diminution of the expenditure of the Council cannot, with due regard to the requirements of the law, be effected by any reduction of the office expenses, which the funds at the disposal of the Council are amply sufficient to defray. The total amount of salaries and rent annually payable is L.430; while the sum appropriated to the six members of this Branch Council for the year 1859, amounted to L.926, 2s."

"I beg leave also to refer to the statement of the receipts and expenditure of this Branch Council for the half-year ending 5th inst., which shows that there is a sufficient fund available for the legitimate and very moderate expenses of the Registrar's office, which do not amount to half the sum absorbed by the six Irish Councillors during the year 1859."

The sums payable to members of the Branch Medical Council for Ireland, for the year ending the 5th January 1860, from "the funds at the disposal of the Council," are as follow:—

Dr Apjohn,	21 attendances at L.2, 2s.,	L.44	2	0
Dr Corrigan,	19	39	18	0
Dr Leet,	20	42	0	0
Dr Smith,	20	42	0	0
Dr Stokes,	21	44	0	0
Dr Williams,	19	39	18	0
	120	L.252	0	0

And for the half-year ending 5th July 1860, are as follows:—

Dr Apjohn,	6 attendances at L.2, 2s., . .	L.12 12 0
Dr Corrigan,	6	12 12 0
Dr Leet,	5	10 10 0
Dr Smith,	6	12 12 0
Dr Stokes,	6	12 12 0
Dr Williams,	5	10 10 0
	34	L.71 8 0

Resolved—That having fully considered the proceedings of the last meeting of Council, in reference to Dr Maunsell's absence, also his letters of 2d June and 20th July, inserted in minutes of 6th August; and further, his refusal at the meeting this day to remain in attendance, the Council are reluctantly obliged to conclude that they cannot continue Dr Maunsell in the office of Registrar; and they therefore resolve that Dr Maunsell be and is hereby removed from the office of Registrar to this Council.

Resolved—That a copy of the above resolution be forwarded to Dr Maunsell.

Resolved—That Dr Smith be requested to act as Registrar and Secretary, *pro tempore*, to this Council.

Resolved—That Dr Smith and Dr Leet be requested to take charge of the office and other properties of the Council, and to carry out such arrangements as may to them seem necessary, pending the appointment of a Registrar.

Resolved—That the salary of the Registrar and Secretary shall be and is hereby fixed at L.200 per annum.

Resolved—That an advertisement be inserted in the *Saunders*, *Freeman's Journal*, *Daily Express*, and *Irish Times*, for the appointment of a Registrar and Secretary at the salary of L.200 per annum, the election to take place on Friday, the 24th instant, at four o'clock P.M. Applications to be addressed to Dr Smith, Secretary *pro tem.*, 121, Lower Baggot Street, on or before Wednesday, the 22d instant.

SUPPLEMENT TO THE MINUTES OF MEETING HELD ON THE 15TH OF AUGUST 1860.

The late Registrar thinks it right to supply certain omissions in the printed minutes of the meeting of the Branch Medical Council, held on the 15th August. When asked if he wished to withdraw during a discussion which was about to be commenced in regard to his official remonstrances against what he considered an improper allocation of the funds of the Council, the Registrar replied that he had no such wish, but would remain or withdraw as the Council might desire. He was then ordered to withdraw, and to remain in attendance; to which he replied that he would withdraw, but would not remain in attendance, his duty as Secretary being, in his opinion, limited to attendance at the Council table. The Registrar then retired, and he has no further knowledge of the proceedings which followed, except what he derives from the printed minutes. The frame of mind in which they were conducted, and the state of exaltation they induced, were illustrated by their ludicrous consummation, when two of the Councillors, between six and seven o'clock in the evening, hurried from the private house where they had irregularly assembled, to the Council Office, and demanded the key of the Registrar's room from the woman servant of the house, from whom information respecting these transactions is derived. They then took possession, after the ancient method of seizing by sod and twig, tumbling over books and papers, and casting out an old coat belonging to the clerk. Finally, they locked the door, pocketed the key, and departed. The Registrar's books, vouchers, and cash in hand were, fortunately, under separate lock and key.

There is another defect in the nature of a *suppressio veri* in the printed minutes. It is a fact (of parliamentary notoriety) that the six Irish Councillors received L.1085, 14s. during the year ending October 1, 1859. This remains uncontradicted; but an attempt is made in the minutes to divert attention from it, by a statement of fees received by them for attendances in Dublin during that period, as if that were the total of their emoluments. No allusion is made to a sum of L.793, 16s., which they drew from the funds of the General Council, towards which the Irish Branch fund was made contributory to the amount of L.616.

The following is the upshot of the above :—

BRANCH MEDICAL COUNCIL FOR IRELAND.

"The election of a Registrar and Secretary to the Branch Medical Council for Ireland, at the salary of L.200 per annum, will take place on Friday, the 24th instant, at four o'clock P.M. Applications to be addressed to Aquilla Smith, M.D."

On the 24th August, Dr Edward Steele, Registrar of the King's and Queen's College of Physicians, was elected Registrar and Secretary to the Branch Medical Council for Ireland.—*Dublin Medical Press.*

THE ARMY IN CHINA.

At the date of the last advices from the army in China, the course of events had entered on a phase of very great interest. The interest depends not merely on the fact that the troops were just then about to commence the serious operations of the campaign, but it arises also from this, that there is reason to think that they, at the same time, entered on a series of great economical and administrative difficulties. There is no doubt that much thought has been given to what has been considered the best means of providing for a late autumn and winter campaign in these scarce known and inhospitable regions; and there is as little doubt that all that the most lavish profusion of money and stores can supply has been supplied. A good deal of premature rejoicing has been given way to in consequence of the tone of the newspaper correspondence from Hong Kong. When a *Times* correspondent is hunted about in a camp, and looked on with jealousy and dislike, it is but natural that he should sometimes dip his pen in gall. When a *Times* correspondent is the honoured private and personal guest of a commander-in-chief, or, as in this case, of a Minister Plenipotentiary, it is but natural that he should dip his pen in rose-water. When we are asked to believe that the ratio of non-effectives at Hong Kong was but some five or six per cent., it may be useful to remember that statistics of sickness can sometimes, like railway accounts, be subjected to a cooking process; and it is only fair to ask, whether or not the invalid battalions, the invalid depots, and the sick transports, of which one occasionally reads, have been taken into account when the statistics were prepared. The encampment at Kooloo, of which so much has been made, and which seems to have had such happy results, was, simply speaking, a necessity. The troops were there, and must have been put somewhere; and in an island which presents nothing but rocks, and peaks, and steep-sided valleys, no other place is available for the purpose. One black regiment was encamped on the limited space at Victoria, but was found to be so great a nuisance that the encampment was removed. Our spirited young contemporary, the *Indian Lancet* (of 15th August), reports a most unfortunate circumstance connected with the victualling of the transports for the voyage northwards. It appears that, notwithstanding the enormous amount of stores which have been sent out from home, the commissariat, influenced perhaps solely by their old dread of "breaking bulk," had bought up a great quantity of salt pork at Hong Kong, and had not even refrained from purchasing barrels which had no brand. It was not until the ships had put to sea that the pork was discovered to be putrid. Fortunately, there was a proportion of sound salted beef on board each ship. From all that can be gathered, and from the evidences perceived at the landing at Talien Hwan Bay, it is clear that the winter climate of the country is a very severe one; and it is also quite evident, that nearly all the food and, it is even possible, the shelter must be that supplied from England. Should winter quarters be found in any large native town, it is earnestly to be hoped that no sanitary enthusiasm may lead to an attempt to stir up the accumulated dirt which forms the very foundation of these towns. Such attempts have been made before in China, and always with the same result—an increase of disease where it had existed, and the initiation of it where it had not. There have been also some similar well-known instances nearer home. It is often the best plan to leave these matters alone and undisturbed, taking care to render them innocuous, as was done at the head of Balaclava Harbour in 1855.

CHOLERA AT GIBRALTAR.

Cholera, which had been hovering over Spain all summer, visiting, in its erratic way, some of the dirtiest towns of the beautiful and dirty Peninsula, lately swooped down on Gibraltar, as if to remind the inhabitants that the Rock is classical ground in the history of pestilence; and also, that they have been foolish and unthrifty in neglecting and allowing to fall into desuetude the system of sanitary police inspections which was instituted some few years ago. It fastened itself on some parts of the civil population, and on a particular regiment, which is said to have been placed in markedly insanitary circumstances, —so bad that, in certain states of the wind, it is exposed to the full influence of sewer air. The disease departed after a brief visit. May the "Scorpions" have taken the lesson to heart, and profited by it!

RETIREMENT OF M. RICORD FROM THE HOPITAL DU MIDI.

The medical profession will hear with regret of the definite retirement of M. Ricord from the post of Surgeon to the Hôpital du Midi. Philip Ricord is a native of America, and was born at Baltimore, on the 10th of December 1800. Owing to the regulation now in force, which excludes from the exercise of hospital functions those surgeons who shall have attained the age of sixty, the term of service of the talented surgeon would naturally have expired at the end of the present year. M. Ricord has, therefore, probably deemed it a more dignified course to resign prior to the completion of the full period. For nearly thirty years this celebrated Professor has occupied the Clinical Chair of the special branch of Surgery to which the Hôpital du Midi is exclusively devoted. The materials with which M. Ricord has built up his colossal reputation have, for the most part, been gleaned from the wards of this establishment. The admiration he has won, the friendships he has secured, the fortune he has accumulated, are all, more or less, consequences of his connection with this hospital. It was not likely, therefore, with such associations crowding on the memories of the speaker and of his audience, that M. Ricord should be able to take leave of the field in which he had toiled so cheerfully and so indefatigably for the space of an entire generation without a lively feeling of emotion and regret, touchingly expressed by himself, and as warmly sympathized in by his hearers. The scene of last Thursday, M. Ricord's farewell to his hospital career, was a complete ovation. For more than two hours a numerous audience of friends, pupils, and admirers listened with deep interest and veneration to a most pathetic parting address. The speech of the talented surgeon embraced a masterly sketch of the many and valuable contributions—the fruits of a long life of well-directed industry—with which his labours have enriched the treasury of medical science. If any man at any moment of his life might be pardoned the indulgence of a little self-glorification, surely M. Ricord, on Thursday afternoon, was entitled to such a privilege. On this occasion, however, the modest and unassuming manner in which he alluded to his immense services charmed and delighted his hearers by its delicacy of feeling; and the deafening acclamations which succeeded his valedictory discourse bore ample testimony to the warm sympathy he enjoys amongst his professional brethren. The following are some of M. Ricord's more celebrated works:—"Mémoire sur l'Emploi du Spéculum dans les Maladies Vénériennes;" "Mémoire sur l'Inoculation Artificielle de le Vérole chez l'Homme;" "Mémoire sur la Blennorrhagie chez la Femme;" "Mémoire sur l'Emploi de l'Onguent Mercuriel dans le Traitement des Erysipèles;" "Réfutation de l'Opinion de Hufeland sur la Blennorrhagie;" "Mémoire sur le Chancre;" "Mémoire sur l'Epididymite;" "Traité Pratique des Maladies Vénériennes, et Recherches sur l'Inoculation appliquée à l'Etude de ces Maladies" (this, perhaps, is M. Ricord's principal work); "Du Sarcocèle Syphilitique, de l'Induration des Corps Caverneux, et d'une Altération semblable de la Coque Fibreuse de l'Œil;" "Différence entre la Blennorrhagie et le Chancre;" "Clinique Iconographique de l'Hôpital des Vénériens;" and the "Lettres sur la Syphilis," originally published in the *Union Médicale*, and now embodied in a volume.—*Special Correspondent of the Lancet*, Oct. 6, 1860.

M. Cullerier has been appointed as M. Ricord's successor at the Hôpital du Midi.

MEDICAL EDUCATION. WHEN DOES PROFESSIONAL STUDY BEGIN?

The following letter from Dr Francis Hawkins, on this important subject, appeared in *The Lancet* of September 29th.

"20*th August* 1860.

"SIR,—I cannot answer your inquiries more definitely than by saying that professional study is considered to commence with the first entrance and *attendance* at a recognised hospital or medical school. Apprenticeship or pupilage is not of itself professional study. All students, therefore, who do not enter and *attend* at a medical school or hospital during the ensuing session 1860–61 will be obliged to conform to all the regulations of the Medical Council, which will come into operation before the commencement of the following medical session 1861–62; *i.e.*, they must pass an examination in general education, must then be registered by one or more of the bodies named in Schedule (A) of the Medical Act, and afterwards pursue professional studies during at least four years.—I am, Sir, your obedient servant,

"———." "FRAS. HAWKINS.

In reference to this communication, Dr Hawkins has written to the editor of the *Lancet* as follows:—

"SIR,—The publication of a letter bearing my signature, in the 'Notices to Correspondents' of your number for the 29th ultimo, was not sanctioned by me. That letter was written in answer to inquiries respecting the Report of the Committee on Education of the Medical Council, and with reference to certain particular cases. But it has been referred by some of your readers to cases to which it was not intended to apply.

"As to all particulars relating to general and professional studies and examinations, I am in the habit of referring students or other inquirers to the examining and qualifying bodies—*i.e.*, bodies named in Schedule (A) of the Medical Act—by which the student in each case is to be registered.

"As I should be glad to be relieved from inquiries on these subjects, which have been occasioned, or at least greatly increased in number, by the unauthorized publication of the letter above mentioned, I shall be obliged by your publishing also the letter which I now address to you.—I am, Sir, your obedient servant, "FRANCIS HAWKINS.

"Medical Registration Office, 32, Soho Square,
London, *October 9th*, 1860."

⁂ As Dr Hawkins' letter, published in the *Lancet* of Sept. 29th, contained information of the greatest importance to students, we cannot think that Dr Hawkins need regret its publication. It is difficult to understand how that letter can be supposed to refer to "cases to which it was not intended to apply." To us nothing can be clearer or more definite than the statements it contains. If the Medical Council impose conditions upon, or make laws for, medical students, they should, if these be uncertain or doubtful, furnish information respecting them. If it be not the duty of Dr Hawkins to reply to questions bearing upon the "regulations" of the Council, we should be glad to know to whom inquiries ought to be addressed.—ED. *L.*

DEATH OF DR JAMES DRUMMOND,

(Author of the Harveian Prize Essay on "The Blood and Blood-vessels," and of the article, "Sympathetic Nerve," in the *Cyclopædia of Anatomy and Physiology*, etc.).

Such of our readers as were connected with the Edinburgh Medical School six or seven years ago will sympathize with us in the feelings with which we record the death, on 13th October, of this young man, once so distinguished a student of medicine and graduate of this University. Dr Drummond was never engaged in medical practice, and was indeed unfitted for practice by his bodily and mental constitution; but he had a genuine love of science and of scientific truth; and few men, in the short span allotted to him, have done more of honest and excellent work. Unhappily, the disease which clouded the latter years of his life effectually destroyed the promise of early distinction which the career of the student had afforded. Amid a host of immature physiological and chemical investigations, pursued with rare zeal and devotion, though perhaps in too desultory a manner for speedy success, the mind, ever busy with discovery, and allowing itself no repose, was overshadowed with insanity. The body, too, was feeble almost from infancy; a disease of the hip-joint, partially healed in early boyhood, was only the prelude to a tubercular affection of the lungs, which declared itself almost as soon as manhood was reached. There needs not now be any delicacy in stating (for there is no one who can be wounded, even in feeling, by the statement) that both these diseases were hereditary; they were, however, very plainly aggravated by the mode of life of the shy and solitary student, following out his experiments, and poring over his books, without regard to the most ordinary precautions against evils too clearly foreseen, and often made the subject of serious warning. The struggle against a defective constitution of mind and body could not, under these circumstances, be long maintained. Seclusion became necessary for a long time the habitual studies were intermitted, and when resumed, it was without any of the old fire and vigour, and with a fitfulness which showed but too surely the almost total wreck of a "spirit finely touched," indeed, but not destined, in the providence of God, to those "fine issues" which might have been expected from it. It is an affecting instance of the strength of the "ruling passion," that up to the very day of his death, poor Drummond never ceased to surround himself with all manner of books on anatomy, physiology, chemistry, electricity, etc., from which he continued to make notes from time to time; that he had also made acquaintance with the grammar of most of the northern languages, including Russian and Icelandic, as well as with the modern Greek, in reading which he found great pleasure. He was, in fact, to the very last, emphatically a student; and a more generous, truthful, simple-hearted, and unselfish student never existed.

Dr Drummond made many original communications to the Physiological Society of Edinburgh, of some of which short abstracts were published in this *Journal.* Most of these researches, however, being fragmentary in character, are to be regarded only as indications of the direction of his studies, which had embraced almost every department of animal and vegetable chemistry, embryology, the development of tissues (normal and pathological), and, in general, the whole field of physiology, in so far as it could be worked out by the balance, the scalpel, and the microscope. When in Germany he studied under Professors Budge of Bonn, and Wagner of Berlin, and also under Professor Bischoff of Heidelberg, whose work on agricultural chemistry he in part translated for the Cavendish Society. The article "Sympathetic Nerve," in the *Cyclopædia of Anatomy and Physiology*, was a most elaborate exposition of the results of modern research in this department; and the Harveian essay on the Development of the Blood and Blood-vessels (which has been only in part published), contained a considerable amount of original investigation, and of reflections which would unquestionably have led to important results, had the author been permitted to follow them out, as he desired, by further experiments and observations. We have now only to regret the loss of a man from whom large additions to science were looked for, and whom many of his associates, now scattered over land and sea, will remember as a true genius, and as one who, amid all the eccentricities of commencing disease, never did an act capable of making an enemy.

VARIETY.

Forgery of a Diploma.—At the Dumfries Circuit Court, on the 28th Sept., before Lord Cowan, David Gibb, medical student, Glasgow, was charged with the crimes of "falsehood and forgery, in so far as, on or about Tuesday the 3d July 1860, at or near Rosehall, in the parish of Dumfries, said David Gibb, being desirous of obtaining the appointment of assistant-surgeon to the Dumfries, Roxburgh, and Selkirkshire Militia, did wickedly and feloniously, at aforementioned place, write and fabricate, or cause to be written and fabricated, a simulated document purporting to be a diploma of competence from the Faculty of Physicians of Glasgow, and did utter and use such document, he well knowing it to be a forgery." The panel pleaded guilty of uttering and using such document. Mr A. T. Boyle, prisoner's counsel, in extenuation, said that the panel, as a student in the Andersonian University of Glasgow, bore the most irreproachable character. Mr Boyle produced certificates to that effect from Professors Bell, Morton, and Penny, of the Andersonian University, Glasgow, and from Dr Watson of the Royal Infirmary there. Mr Boyle said it had not been out of any sordid motives that his client had uttered this document. It was well known that the salary of an assistant-surgeon was a mere trifle, while the expense of equipment was considerable. It had been out of a desire—he might almost say a boyish desire, for at that time Mr Gibb was scarcely twenty—to enter the ranks of such a regiment as the Dumfries Militia, that in an evil moment he had yielded to ill advisers, and uttered this document. He had made every reparation in his power by repaying the small sums he had received as salary while performing the duties of assistant-surgeon; and he (Mr Boyle) hoped that his Lordship would take as lenient a view of the matter as possible, in consideration of the youth of the panel and the misery he had endured since that unhappy occurrence. Lord Cowan said that it was one of the most painful cases he had ever met, that a young man of the education, character, and talents which the prisoner appeared to possess, should ever so far forget himself as to commit this breach of law. It was within his recollection when forgery was visited with the highest penalties of the Court. Luckily this case was not one such as the forgery of bank bills, but one which had been of little benefit to the panel. But, even looking at the present offence in its mildest form, he could not, sitting there to award impartial justice, visit it with a less penalty than twelve months' imprisonment, in order to show all that in this country no good could be attained by evil. He hoped that when the prisoner was restored to society this would prove a lesson to him.—*Dumfries Standard.*

PUBLICATIONS RECEIVED.

Acton—A Treatise on Diseases of the Urinary and Reproductive Organs. By William Acton, late Surgeon to the Islington Dispensary, etc., etc. London, 1860.

Adams—On the Reparative Process in Human Tendons. By William Adams, F.R.C.S., etc., etc. London, 1860.

Adolphe Henke's Zeitschrift für die Staatsarzneikunde. Erlangen, 1860.

American Medical Times—July 21 and 28; August 4, 11, 18, and 25. New York, 1860.

Barker—On the Climate of Worthing: its Remedial Influence on Disease. By W. G. Barker, M.B. Lond., etc. London, 1860.

Baxter—On Organic Polarity. By H. F. Baxter, M.R.C.S.E. London, 1860.

Bird and Brooke—The Elements of Natural Philosophy. Fifth Edition. By Golding Bird, M.D., etc., and Charles Brooke, M.A., etc. London, 1860.

Boston Medical and Surgical Journal—September 6, 13, 20, and 27. Boston, 1860.

British American Journal — September. Montreal, 1860.

British and Foreign Medico-Chirurgical Review—October. London, 1860.

Bulletin Général de Thérapeutique—September 15 and 30. Paris, 1860.

Canstatt's Jahresbericht. Parts 2, 6, and 7. Wurzburg, 1860.

Dublin Medical Press—October 3, 9, and 17. Dublin, 1860.

Forster—The Surgical Diseases of Children. By J. C. Forbes, F.R.C.S., etc., etc. London, 1860.

Fresenius—Quantitative Chemical Analysis. By Dr C. R. Fresenius. Edited by J. L. Bullock, F.C.S. London, 1860.

Gazette Medicale de Paris—September 29; October 13. Paris, 1860.

Gazette des Hôpitaux — September 27 and 29; October 2, 4, 6, 9, 11, and 13. Paris, 1860.

Gazette Hebdomadaire de Medicine et de Chirurgie—September 29; October 5 and 12. Paris, 1860.

Glasgow Medical Journal—October. Glasgow, 1860.

Guy's Hospital Reports. Vol. VI. London, 1860.

Hall—The President's Address at the British Medical Association. By C. R. Hall, M.D., etc., etc. Torquay, 1860.

Hopley's Tracts—Two Lectures on Bodily Exercise; A Lecture on the Education of Man; Facts bearing on the Death of Reginald C. Cancellor; Wrongs which Cry for Redress. By Thomas Hopley, F.S.S. London, 1857–58–60.

Inman—On Myalgia: its Nature, Cause, and Treatment. By Thomas Inman, M.D. Lond. London, 1860.

Journal de la Physiologie de l'Homme et des Animaux—October. Paris, 1860.

Journal de Medicine et de Chirurgie—October. Paris, 1860.

Journal für Kinderkrankheiten—May and June; July and August. Erlangen, 1860.

Mayne — Expository Lexicon of Medical Terms. Part 10. London, 1860.

North American Medico-Chirurgical Review —July and September. Philadelphia, 1860.

Ophthalmic Hospital Reports. No. 11. London, 1860.

Psychological Journal—October. London, 1860.

Revue de Thérapeutique Medico-Chirurgicale—October. Paris, 1860.

Zeitschrift der Kaiserl. Königl. Gesellschaft der Ærzte zu Wein—July 16, 23, 30; August 6, 13, 20; September 10.

Part First.

ORIGINAL COMMUNICATIONS.

Article I.—*Clinical Report on the Diseases of Women; with Observations.* By Alexander Keiller, M.D., F.R.C.P.E., Senior Ordinary Physician, and Clinical Lecturer on the Diseases of Women, in the Royal Infirmary, Edinburgh.

From the ample field of practical observation which I have enjoyed, while acting for the last ten years as ordinary physician to the Edinburgh Royal Infirmary, and the attention which I have, during the greater part of that period, necessarily devoted to the clinical study of the special diseases of women, I venture to hope that some record of my hospital experience may now prove in some degree acceptable to the profession. From the collection of cases which have been treated in the female wards allotted to me, I shall endeavour to select those most worthy of notice; and, with the view of rendering their practical import as evident and conclusive as possible, I shall strictly adhere to the history, progress, and result of the individual cases as they have been from time to time reported in the hospital journals by my special assistants, the various resident physicians, who acted along with me, and whose faithful and assiduous discharge of duty I have good reason here gratefully to acknowledge.

In thus attempting to make a proper selection from the journals of my hospital practice, I shall first arrange the cases into groups, then give them as they individually stand recorded, and afterwards offer any practical observations which may appear to be necessary.

By adopting this plan of arrangement, a more useful clinical report will be furnished than could be done by accompanying the details of each case with remarks which may equally appertain to a group or special class of cases.

The treatment of uterine and vaginal prolapsus, and the management of urinary fistula, occurring in the female, have attracted much attention during the last few years, and have led to considerable improvements in the radical treatment of many cases, which were formerly only partially remedied by palliative modes of cure. The former of these two important groups of cases I shall at once proceed to note.

ILLUSTRATIONS OF THE OPERATIVE TREATMENT OF PROLAPSUS RESULTING FROM PERINEAL LACERATIONS, ETC.

Upwards of three years ago I read a communication to the Medico-Chirurgical Society, on the surgical treatment of prolapsus resulting from laceration, and other abnormal conditions of the perineum; and on that occasion cited the particulars of a number of cases which I had successfully treated by operative means. Since then I have met with and treated a great variety of such cases, and have tested in various ways the comparative value of the observations and improvements of others, as the following record of hospital cases will show.

CASE I.—Catherine J——, æt. 39, seamstress, admitted May 1, 1855. States that she has had two children, the youngest being 12 years old. Not many days after her first confinement, which was in September 1841, she suffered from prolapsus, of which she did not acquaint her medical attendant, but kept it up as well as she could with cloths, bandages, etc. Eleven months after this she again became pregnant, and during the whole time of pregnancy suffered much from bearing-down pains. Immediately after her second delivery, which was a very protracted one, the uterus again protruded; and she suffered from severe floodings, which were arrested by the usual means. She sought no relief from the prolapsus till 1845, when she was advised to apply astringents, and to wear a gutta percha ring, which, however, did her no good.

In March 1855 she came into the Royal Infirmary, and was dismissed relieved in April, but again returned in May.

On examination, it was ascertained that the bladder was involved in the anterior part of the prolapsus, occupying about one-third of the upper extent of the tumour. The posterior wall of the vagina was considerably prolapsed, but the rectum was not involved. With the view of diminishing the great bulk of the prolapsus, and securing vaginal contraction, Dr Keiller resolved to try the effect of removing portions of the mucous membrane, that of the posterior wall being first done by means of a pair of large curved scissors (raising up the vaginal wall, and cutting from the base of the tumour to as near the os uteri as could be accomplished). The edges of the wound were brought together by three interrupted sutures, and the tumour immediately afterwards reduced. Considerable oozing of blood subsequently took place, which was, however, easily suppressed. The stitches were removed within a week, and gradual contraction of the wound afterwards took place, which shortened the posterior wall, but did not much diminish the general size of the tumour.

July 6. The tumour is still prolapsed, especially during coughing or when at stool, though not to the same extent as before. It being now six weeks since the first operation, a second one was had recourse to, consisting in the removal of a considerable portion of the anterior wall of the vagina. Two transverse incisions were made elliptically, so as to include about two square inches of the surface of the tumour. The mucous membrane was carefully dissected off by the knife, and the edges brought together with four stitches. These were removed seven days after, union having taken place throughout.

Aug. 9. The tumour is now considerably diminished in size; and the patient left the hospital much relieved, although not free from prolapsus, on straining or going to stool.

CASE II.—Mary-Ann K——, æt. 32, unmarried, admitted March 27, 1856. About nine years ago was delivered of a female child at the full time. She had a protracted labour, the case being, according to her account, "a cross birth." She got out of bed on the third day after her confinement, but was not able to walk about until ten days afterwards.

About two years subsequent to her confinement she first felt the womb pressing down, especially after heavy washings. The bearing-down feeling continued until about three years ago, when she first noticed the womb to be "very low down in the front birth." It, however, used to return, without pressure being applied, on taking rest for a few days. After this, the uterus became more and more prolapsed, so as to cause eversion of the vagina. She remained in this condition for about two months, when, in consequence of soreness of the swelling and inability to walk with comfort, she consulted a practitioner, who treated her by astringents, and afterwards introduced a large woollen pessary, which, however, had to be removed at the end of a month, as it occasioned her great pain. After the removal of the pessary she experienced much less discomfort, and continued to follow her usual avocation as a servant without any support or bandage, merely applying an astringent lotion twice daily to the now completely prolapsed tumour. The rectum has also been prolapsed for about six months. When this complication first took place she used to press it up easily, but now cannot do so.

On admission, the uterus was completely prolapsed. There was an ulcer about the size of a shilling on the anterior, and a smaller one on the posterior wall of the vagina. The os uteri was so small as to be capable of admitting only a surgeon's probe. The cavity of the uterus was found to measure three inches. Menstruation regular, but painful. She was ordered a lotion, to heal the ulcers, and to take rest; the womb to be supported by a bandage.

June 1. She has hitherto been suffering very much from dysmenorrhœa, caused by the extreme smallness of the os uteri, which was almost occluded. As it was difficult to pass any instrument through it, Dr Keiller to-day incised the os by means of a probe-pointed bistoury. A little hæmorrhage occurred; and a dilator was introduced through the os, to keep it patent.

June 3. Feels much relieved; and the nausea from which she previously suffered is now gone.

June 10. Since last report no change has taken place in the patient, with the exception of her menstruation not being attended with pain. The prolapsed mucous membranes have taken on a more healthy appearance. Several pessaries have been tried, but without any benefit. Dr Keiller, therefore, determined to perform the operation for restoring the perineum, so as radically to cure the prolapsus, and which he accordingly did to-day. Two grains of opium were given an hour after the operation.

June 19. Patient had her urine drawn off last night at eleven o'clock, and her position was changed from her back to her left side. She did not sleep much during the night, though she had four grains of opium. Urine has been drawn off twice to-day. Considerable swelling of the parts has taken place. Pulse 94.

June 20. Pulse this morning, 92. Œdema of the wound still continues. Three grains of opium were given during the day, and the urine drawn off four times, and the vagina syringed out with tepid water.

June 21. Pulse 86. Slept little last night. Discharge from the vagina today is somewhat purulent. The œdematous parts were punctured with a lancet, and allowed to bleed a little. Acetate of lead and opium lotion was applied afterwards to the parts. Four grains of opium given since yesterday, and urine drawn off four times.

June 22. Superficial stitches were removed to-day; œdema gone; pulse 96. Complains of pain on the right side of the wound, the vulva of that side being more swollen than the other.

June 23. To-day, Dr Keiller removed the deep sutures and quills. A quantity of pus escaped, especially from the right side. In the evening she expressed herself as much more comfortable.

June 25. To-day she began to menstruate. She was allowed to make water without the catheter.

June 27. Slept very little. Early in the morning she began to suffer pain in the bowels, and a great desire to go to stool. She took another grain of opium, but the pain and desire to go to stool still continued. At 8 A.M. she had a castor-oil enema given her. Large masses of hardened fæces came away, which greatly distended the parts, and partially opened up the wound superficially; the deeper portion of the wound, however, remained quite adherent. She was ordered to lie as much as possible on her side, and a mild lotion to be applied to the parts externally.

July 5. Since last report she has continued to lie on her left side. Her bowels have been moved once every day. On examination, there is seen a small fistulous opening in front of the sphincter ani.

July 7. The fistulous opening has contracted to the size of a goose quill. Discharge from the wound is slight, but comes away in greater quantity when she is going to stool.

July 22. Got up to-day to walk about for the first time. Since last report the fistula has been thrice cauterized, but with little effect. The uterus was found, on examination, to be lying down, pressing upon the newly-formed perineum, and causing pain in making water. She experienced great relief by gently raising the uterus.

Aug. 9. As she is now very much improved, she was allowed to go home, but to return soon.

Nov. 1. Visited the hospital to-day; and states that she has enjoyed much comfort since she left, being now able to walk about without the pain and bearing-down discomfort which she formerly experienced. On examination, there was no external appearance of prolapsus, and the formerly existing anal irritation was much less; the mucous membrane of the extremity of the rectum being, however, still somewhat prolapsed, and covered with a flaky secretion. The perineum was perfect, with the exception of the small fistula before mentioned, through which a portion of the posterior wall of the vagina was slightly protruded. This opening did not seem to interfere with the usefulness of the artificial perineum, and the still slightly prolapsed anus did not appear to demand any other treatment than the frequent use of astringent lotions. Examination of the uterus per vaginam proved that the parts had undergone a great change for the better—the uterus being now much diminished in size, and the os and cervix less rough and bulky than formerly. The vaginal walls were also much less relaxed, and altogether more natural than before.

Feb. 2, 1857. Examined again to-day. A very small mucous fistula still exists about an inch from the anus. She states that she feels perfectly well, and suffers no inconvenience from it.

CASE III.—Marion W——, æt. 32, also admitted March 27, 1856. States that she is unmarried, and enjoyed general good health up till about 3 years since, from which time she dates her present complaint. About 9 years ago she had a female child at the full time. She left her bed on the third day after her confinement. Two years after this she first felt the womb pressing down, especially after heavy washings. Four years after she first noticed the womb to be low down in the front birth. She was able to return it easily on going to bed. Since that time the prolapsus gradually became worse, until almost complete eversion of the vagina took place.

Three years ago she first applied for advice, and had a wooden pessary introduced, which, though it pained her much, she wore for two months, at the end of which time it was removed, and the prolapsus returned as bad as ever.

On admission, the uterus is found to be completely prolapsed. There was an ulcer the size of a shilling on the anterior wall of the vagina. The os uteri was so small that it was difficult to detect it. The uterine cavity and cervix measured three inches. Menstruation was regular, but very painful. The rectum is involved in the tumour. For the present, the tumour was simply reduced, and rest, with astringent injections, ordered.

June 1. The ulcer is now healed, and she wears a small pessary with much relief. For some time she has suffered much from dysmenorrhœa, which, however, Dr Keiller removed, by incising the os uteri so as to overcome its partial occlusion.

July 18. From last report, little change has taken place in the patient, with the exception of her menstruation being unaccompanied with pain. The tumour still prolapses; and as pessaries were found to have little effect on the prolapsus, Dr Keiller determined on performing the perineal operation, which was done under chloroform.

July 19. She was ordered an opiate occasionally, so as to keep the bowels constipated, and the urine to be drawn off every fourth hour.

July 22. The deep stitches were removed on the third day, and the vagina syringed out with warm water.

July 23. The superficial sutures were to-day removed; a quantity of pus escaped from the right side of the wound; opiates and catheterization to be continued.

July 25. Menstruation began to-day; allowed to pass urine by turning on her knees.

July 27. Bowels moved; but on account of the great distention of the bowels, and the severe straining, the recent wound was partially opened up. Ordered to lie on her left side.

July 31. On examination, there is a small fistulous opening just in front of the sphincter ani. The anterior part of the wound being quite united, discharge rather profuse, with a good deal of local pain and heat.

Aug. 7. The fistulous opening now much contracted.

Sept. 9. At her own request, she was allowed to go home.

Nov. 1. Visited the hospital to-day, and states that she has enjoyed much comfort since she left, being able to walk about without the pain and discomfort formerly experienced. The uterus was found to have much diminished in size, and the parts to have assumed a more natural relation.

CASE IV.—Elizabeth G——, æt. 28, servant, unmarried. Admitted July 10. Sent from the Maternity Hospital on account of laceration of the perineum during her first labour.

July 24. Since admission, patient, who is a robust-looking person, has remained in good health. The edges of the laceration present a rough granular appearance, but no indication of union. The lochial discharge still continues, but is gradually diminishing.

Aug. 25. To-day Dr Keiller operated as before, according to the plan of Mr Baker Brown, and the same after-treatment adhered to as in the former cases.

On the evening of the fourth day, the bowels were freely moved; and next day (30th), the sutures, both superficial and deep, were removed, as purulent discharge had commenced.

Up till September 12, on which day she rose for the first time, she continued to improve. The discharge of pus from the vagina is gradually decreasing; and, with the exception of slight diarrhœa and irritability of the bladder, she is well.

Sept. 19. She was examined to-day. A minute fistulous opening is discovered at the part nearest the rectum.

Sept. 29. Dismissed cured.

This patient subsequently came to the hospital on one or two occasions, and her case was found to be a very satisfactory cure.

CASE V.—Mary Anne K——, æt. 44, married, mother of nine children. Admitted August 14, 1856.

Patient states that about twenty-four years ago she was delivered of her first child, a female. She kept her bed for a week, after which she supposed she had an attack of piles. As she began to gain strength, she was less troubled with the prolapsus, which ultimately disappeared, except after her confinements, or when any debilitating cause induced more than ordinary weakness. At her last confinement, three and a half years ago, she was delivered by instruments, and soon after the uterus became prolapsed, and has remained ever since in that condition. She experienced great pain and inconvenience; but, from feelings of delicacy, she did not apply for medical advice until July last, when she consulted a medical man, who replaced the uterus for her, and introduced a gutta percha ring, which, so long as the patient sat, retained the uterus in situ, but proved ineffectual when she rose and walked about. Two weeks after this she applied for relief at the Royal Infirmary, and was supplied with a pessary; but this also soon came away. She returned to the Hospital on the 11th September.

Sept. 15. To-day, her bowels having been previously well opened by injections and castor-oil, Dr Keiller performed the perineal operation, and enjoined the same mode of after-treatment as in previous cases.

Sept. 19. Deep sutures removed to-day. A considerable quantity of pus escaped from the vagina, and the parts where the quills lay were slightly ulcerated.

Sept. 20. Superficial sutures were removed.

Sept. 22. Bowels freely opened.

From this date she gradually recovered, and was soon able to return home,—the uterus being no longer extruded as before. In this instance Dr Keiller found the uterus to be unusually large, and completely retroverted,—the fundus being readily felt, and the whole uterus being so bulky as to add considerably to the risk of a subsequent return of the prolapsus.

Dec. 10. Visited the hospital to-day, complaining of cough and severe pain in the left iliac region, and feels unable for any hard work on account of bearing-down pains felt in the back, and sharp pain at the seat of the incision. On examination, the perineum is found strong and entire. The prolapsus still exists, but the uterus does not now present externally, as formerly, though still to a very slight extent, being for the most part supported by the perineum. When, however, the patient presses down much, the os uteri does present externally. A cough-mixture was given to the patient, and she was to return in a few days.

This patient continued to visit the hospital; but, as was expected by Dr Keiller, exhibited symptoms of the continuance of prolapsus, from the retroverted uterus being so abnormally large and heavy. The restoration of the perineum, however, not only prevented the external appearance of the uterine tumour, but allowed the retention of supporting pessaries, which, previous to the operation, could not be retained, in consequence of the total destruction of the structures forming the perineum.

CASE VI.—Jane B——, æt. 56, married. Admitted January 19, 1857. Has been married for nearly thirty years. Has had ten children and two miscarriages. Her last child was born at the seventh month, nine years ago. Her last labour was more protracted than usual, having lasted about thirty hours. Prolapsus took place about four months after her last confinement. Till within the last three weeks, she never had any difficulty or pain in micturition, but since then she has suffered much from both, being obliged to insert her finger within the vulva to enable her to empty her bladder. Ever since the prolapsus took place, she has been much troubled with costiveness; and her life has been, according to her own statement, rendered miserable. To keep up the protrusion, she wore a bandage for some time, and, about six years ago, had a ball pessary introduced by a medical man, but it did her no good. Vaginal injections of various kinds were also used, but without effect.

The vaginal walls were, on examination, found to be very considerably prolapsed, the anterior presenting a well-marked *cystocele*, while the posterior wall protruded in the form of an unusually large *rectocele*,—the diagnosis of these being readily made by the introduction of a catheter or sound into the bladder, on the one hand, and the finger into the rectum, on the other.

Feb. 11. The patient, having been duly prepared by enemata and purgatives, the operation was performed to-day. Chloroform being administered, she was placed in lithotomy position, and the usual horse-shoe piece of mucous membrane removed, and also a triangular portion dissected from off the posterior vaginal wall; a small portion was also removed from the anterior wall. The edges of the perineal wound were next brought together by quilled sutures, and afterwards superficially by interrupted sutures as before. The patient was laid on her left side, with the knees tied together; and when the effects of the chloroform disappeared, two grains of opium were given, and one grain ordered to be administered every fourth hour, and her urine to be drawn off frequently. There were some sickness and vomiting during the afternoon. She, however, suffered little pain, and soon became tolerably comfortable. Catheter was passed, but only a small quantity of water was found in the bladder. Says she secretes very little, and is very thirsty.

Feb. 12. Slept little since last night, but feels refreshed. Pulse 90, and soft.

Feb. 13. Slept well last night. Pulse 76. Ordered 4 oz. Port. Wound is slightly tumid, but appears to be uniting by the first intention. She suffers but little pain.

Feb. 14. Slept well. Parts looking very well, there being but little swelling, and no pain.

Feb. 16. Rested very well last night. On examining the parts, they appear to be somewhat redder than before, and also more tumid. Three of the superficial stitches have ulcerated out. The quilled sutures were removed to-day (being the sixth since the operation). The wound appears to have united throughout its entire extent. A considerable quantity of pus escaped on the removal of the deep sutures, which were of ordinary ligature silk.

Feb. 17. A slight amount of superficial sloughing is going on where the quills were pressing. The wound is, however, looking very well. Still some discharge from the course of the deep sutures.

Feb. 18. Had slight rigors last night, and this morning has a very sharp pain in the left side, immediately below her breast, and which is very severe on taking a long breath, or on coughing. On examination, no dulness is detected on percussion. A distinct friction sound, however, is heard at the spot complained of, but it is limited in extent.

Feb. 19. To-day her bowels have been freely opened by castor-oil, without any injury to the parts. Catheterizing and opium to be discontinued, except one grain of the latter at night.

Feb. 25. Improving rapidly. The wound is entirely healed, and on passing the finger into the vagina, the perineum is felt to be perfectly sound, and of considerable thickness. The cystocele is almost gone, and nothing remains of the rectocele. Has no pain in the parts, and has been going about the wards for the last two days.

March 16. She was to-day dismissed cured, without either pain or discomfort in micturition, and expresses herself as being "quite a different woman" since the operation.

On several occasions this patient visited the Infirmary; and, on examination, the extreme vaginal prolapsus, from which she had previously suffered, was found to be completely removed.

(*To be continued.*)

ARTICLE II.—*Case of Traumatic Spreading Gangrene, after Severe Compound Fracture of the Leg, for which Amputation beneath the Trochanters was performed, and the Arteries secured by four Acupressure Needles: the Femoral Artery, at its giving off the Profunda branch, was relieved from Pressure at the Forty-ninth Hour after the Operation: with Recovery; and Remarks.* By P. D. HANDYSIDE, M.D., F.R.S.E., formerly one of the Surgeons to the Royal Infirmary.

JOHN M'——, aged 14 years, acted as "roadsman" in one of Lord Rosslyn's coal shafts near Dysart. Here is an incline, about 60 yards in length, with a fall of about one foot in every eight, furnished with a double line of rails, along which loaded and unloaded waggons are continually passing and repassing. These are let down by means of a rope-chain from the top of the incline to the bottom, where they are shunted to a level line of rails leading to the bottom of the "shaft." The loaded waggons go down on the one line and on the other alternately.

On the 7th of July last, at 6.30 A.M., a loaded waggon, containing fully 7 cwt. of coals, had been despatched from the top of the incline in the customary way; but, when within about 30 yards of the bottom, the connecting ring gave way, and, now unchecked, it ran with increasing impetus down the slope. One of the neighbouring miners, on hearing the unusual noise, called to those below to stand clear of the incline, as something had gone wrong. M'——, instead of occupying his proper seat, about two yards away from the foot of the incline, there to await the due arrival of a full waggon for the purpose of uncoupling it, had been sitting, as was his wont, in the space between the two lines of rail at the foot of the incline. He, now alarmed, started to his feet to escape the danger; but, uncertain on which line the waggon might at this time be coming—the extreme height of the "mining road" being only 3½ feet—went right in the way of danger, and the loaded waggon ran tilt against him, knocked out his lamp, and carried him, in a vertical posture, for about a yard distance, when it forcibly impacted him against one of the "trees" at the extreme end of the slope.[1] The miners, on hurrying to the spot, found M'—— pinned by the lower projecting ledge of the waggon to the side of the pit so firmly, that the waggon had to be pulled back ere he could be extricated; when he was found insensible, with his left leg severely crushed, and having sustained a considerable loss of blood from the seat of the injury. He was at once taken to the bottom of the pit-shaft, and thence raised to the top, where a cart was procured, in which he was conveyed to his home in Dysart. Dr Todd, surgeon to the district collieries—to whose kindness, as well as to that of Dr Bonthron, I am indebted for most of the narrative of this case—was at the same time sent for, and at once arrived.

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[1] These so-called "trees" are, in general, portions of fir trees, with their branches coarsely lopped off, and set as upright props, a few feet apart, along the sides of the mining-roads, to prevent the roofs from giving way when the coal is being wrought out.

Dr Todd found that, with the exception of an immaterial flesh wound on the left elbow, the injuries received were entirely confined to the left leg, whence there now proceeded only a slight venous oozing. Sickness, and a small, quick pulse, with all the concomitants of severe shock to the system, were present. Examination showed two lacerated wounds in the leg, with compound fracture of both bones, extensive contusion, and ecchymosis of the integuments below the knee. The wound on the inner side of the *tibia* laid bare that bone, extended from about three inches above the inner ankle directly upwards for nearly four inches, having its edges lacerated and everted. The wound on the outer side of the leg was about one inch and a half in extent, but inverted and attenuated, as if caused by the penetration of some projecting body from without. It communicated directly with the *fibula*, and was situated about six inches and a half above the outer ankle, over the margin of the gastrocnemius tendon. Further examination showed that the *tibia* had been fractured very obliquely; and that the *fibula* was broken, but in an obscure manner. In neither case was there any apparent comminution, or much displacement. The soft parts, however, surrounding both wounds were greatly lacerated and destroyed,—at the outer wound, as if a penetrating body had been turned in all directions while within the limb. Pulsation was detected at the ankle-joint, but was feeble and indistinct; and, "altogether, the appearances seemed," in the words of Dr Todd, "to indicate that the main arteries of the limb, with the nerves, were more or less injured; and that, therefore, the chances of the leg doing well, if put up for re-union, were so small, that primary amputation was both warrantable and necessary."

Under the circumstances, he called in Dr Dewar, of Kirkcaldy, for consultation; when, after mature deliberation, it was resolved that conservative principles should be tried, and that the boy should have the chance of retaining his limb.

Accordingly, four points of interrupted suture were put into the wound over the *tibia*, and two into that over the *fibula;* and the limb was placed in a M'Intyre's splint, so as to admit of suitably dressing the wounds. The bowels were relieved, and an opiate thereafter given. Towards evening, the patient had slept a little; his countenance was less anxious; tongue dry; pulse stronger, and less rapid; leg swollen.

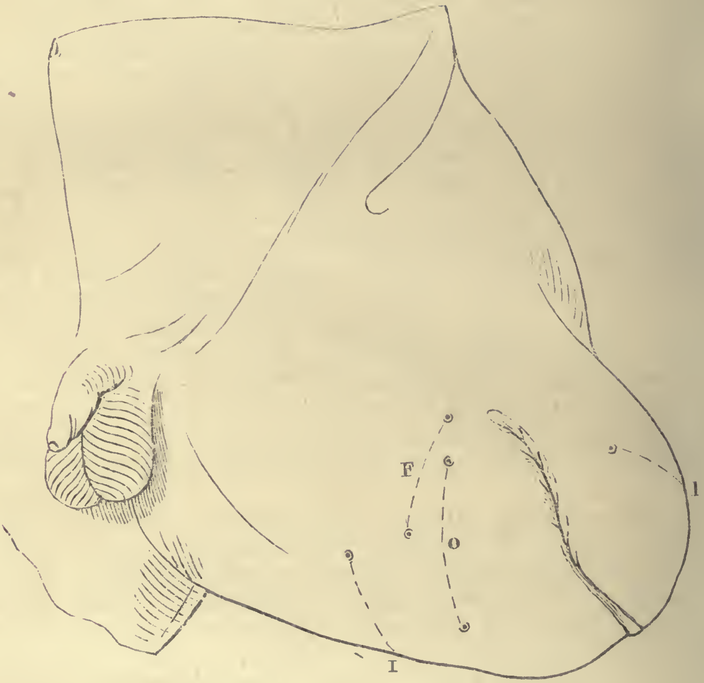
July 8, 10 A.M.—During the night has been rather restless; skin hot and dry; face somewhat flushed; pain at times very severe; tongue slightly furred in centre, red and clean at edges; thirst; pulse 86, full and strong; leg hot, swollen, and tense; wounds discharging a serous-like fluid—edges thick, red, and everted. 8 P.M.—Countenance more anxious; pulse harder, fuller, and 90; skin as before; tongue glistening and red; thirst considerable; pain excruciating; patient restless and unmanageable; leg hot, swollen, and red; no discharge from wounds—edges elevated, swollen, and dry; slight tension on the sutures.

July 9, 10 A.M.—Countenance less indicative of pain, but still anxious; patient has slept but little; tongue moist, but furred; skin perspiring freely; thirst less intense; pulse softer, 96; pain much less severe, at times altogether absent; leg swollen, but puffy, mottled, red, and colourless; temperature rather below the normal standard; wounds discharging an offensive briny fluid, edges soft and flabby; gangrene is suspected. 8 P.M.—Pain almost gone; countenance anxious, but of a natural hue; tongue dry and coated; skin as before; thirst constant; pulse 100, and feeble; patient losing strength; mind irritable and unsettled; leg pits slightly on pressure—is colder and mottled—of a darker, almost purplish, colour in some parts; wounds not discharging, their edges are flattened, and of a dark red colour; gangrene evident, and spreading upwards, already one inch higher than the wound over the tibia.

July 10.—Symptoms of gangrene more marked; pulse 104, getting weaker; patient restless, and losing strength rapidly; tongue brown, and mouth dry; countenance pale and meaningless; skin covered with a clammy perspiration; leg cold, and of a darker purple hue; one phlyctena near the wound over the tibia, beyond which the gangrene has spread 2½ inches upwards in irregular lines.

July 11.—Pulse 106, weak, and irregular; patient considerably weaker; tongue and mouth foul, and more dry; skin clammy; countenance pale and more meaningless; features small and pinched; patient disposed to lie quiet and silent, unless roused; gangrene of leg still spreading, now within two inches of knee-joint, of a purple colour, almost black, with shades of dark green and yellow interspersed; phlyctenæ general; offensive fetor; limb quite cold below line of wounds; patient still feels some pain on firm pressure being made on the gangrenous parts; wounds putrescent and moist; pulsation still distinct in popliteal space; no line of demarcation traceable. A consultation was held between Drs Todd, Dewar, and Bonthron, when it was resolved to amputate above the knee-joint.

July 12.—Gangrene yet spreading, is now within a few lines of knee-joint at advanced parts; physical phenomena in leg more distinctly and intensely marked; pulse rapid, weak, and irregular; respiration heavy and sighing; strength prostrated; mind unsettled, except when roused; speech somewhat inarticulate; countenance pale, and contracted in the features; skin cold, and bedewed with a clammy sweat; putrefaction going on rapidly in the dead limb. On that afternoon I was called in consultation, and met Drs Todd and Bonthron of Dysart, and Dr Dewar of Kirkcaldy, on the question



Dr Handyside's Case of
ACUPRESSURE IN AMPUTATION
FOR TRAUMATIC SPREADING GANGRENE.

as to whether amputation *at this late period* might save the patient. I found him with a sunken aspect; tongue dry and furred; œdematous effusion, with phlyctenæ around the knee; and no pulsation in the popliteal, that in the femoral being 125, and weak. On examining the injured limb under chloroform, the thigh was found, by measurement, one inch thicker than the other, its lymphatics tense, and the inguinal glands much enlarged; yet, after satisfying myself, *first*, that the great cavities seemed free from effusion, and from other untoward effects likely to have followed so serious an accident; *secondly*, that there existed no constitutional contra-indication to the removal of the limb at as near a point as possible to the spreading gangrenous inflammation; and, *thirdly*, as it seemed thus sufficiently clear that the cause of the gangrene was external, and within reach of the knife,—I therefore advised the immediate adoption of amputation high in the thigh. Being asked by these gentlemen to undertake the responsibility of this operation, I accordingly, at 6 P.M., proceeded to remove the limb under chloroform, executing the usual oblique flaps, and sawing the bone just beneath the trochanters, a part of the limb too high for the employment of the tourniquet. Not above ℥iij. of blood were lost; and four needles (improvised for the occasion) sufficed—*one* for the external flap (on the inner surface of which was compressed apparently an ischiatic branch), and *three* for the internal flap (on which were compressed, 1st, the femoral, at the point where it gives off the profunda; 2dly, apparently the obturator; and, 3dly, apparently another ischiatic). Three or four smaller vessels were subjected to torsion only. After stitching together the flaps, slightly wetted lint was applied to the face of the stump, which was then supported with a roller. On removal to his bed, the patient got a little whisky and water, with two grains of opium.

On examination of the ablated limb, the muscles of the calf were found extensively lacerated, with intervening coagula of blood; the arterial trunks were found obliterated by coagula as high nearly as the ham; and the fractured, bruised, and lacerated parts were the seat of sero-purulent and sanguinolent effusion.

Four hours after the operation, the patient had not slept, though drowsy, and his mind was still wandering; pulse 108, weak, but soft; skin rather hot, but not too dry; tongue moister; complains of very severe pain in the stump, and in his (absent) leg; no trace of hæmorrhage. He had now two additional grains of opium. Shortly after this he went to sleep, and slept very softly all night, only awakening occasionally, when he asked his family to leave his room, and then he again fell over to sleep.

13*th*, 10 A.M.—Pulse 104, and improved; skin more natural; countenance free from anxiety; features soft and pleasant; tongue more moist, still furred, yet cleaning; takes soft food, but without relish; wound free of swelling and tension; femoral artery felt to pulsate to about an inch of its occluding needle.—At 6 P.M. I revisited M'——. Pulse soft, 100, regular; tongue soft, moist, cleaner; appetite returned; asks for bread and milk; skin cool, moist; excreta natural; has slept since morning; stump soft, cool, of natural colour, less painful. A line of union by the first intention is begun. I removed two of the occluding needles—viz., that from the external flap, and that from the posterior of the three vessels of the internal flap. These two vessels were thus relieved from acupressure twenty-four hours after their occlusion, yet no trace of the slightest sanguineous oozing was perceptible. I simply reapplied the damp lint, and supported the stump by a pillow and a sling towards the abdomen.

14*th*, 10 A.M. (second day).—Has slept well; appetite fair; tongue cleaner, soft, and moist; countenance lively; complains of pain in the enlarged inguinal glands; femoral pulse felt to within one inch of the occluding needle; no oozing from the stump, which is cool and without tension or swelling of any kind.—At 7½ P.M. I saw M'—— for the third time, when I found him anxious and disturbed, on account of pain and tenderness in the enlarged inguinal glands; his skin was rather hot; thirst moderate; pulse 112, though soft and regular; tongue rather dry. His appetite was improved, and he asked for animal food. The stump was free of pain, but the granulations were weak-looking. There was no stain of blood on the dressings. It being now the forty-ninth hour after the operation, I removed the two remaining acupressure needles, and this without any apparent effect; ordered a moistened hot sponge to the groin; and prescribed a purgative enema (to be followed, if necessary, by castor oil in the morning), and a draught, consisting of three-fourths of a drop of Fleming's Tincture of Aconite, with a few grains of Epsom Salts and of Cream of Tartar, to be administered every two or three hours while awake.—At 10 P.M. (as reported by Dr Bonthron), the femoral pulsation continues to be felt, as formerly, to within an inch of the point at which it was occluded.

15*th*, 11 A.M.—Face a little flushed; tongue somewhat glistening and patchy; pulse 108; has slept pretty well; diet, which is low, is taken with appetite; stump cool, and looks well; no trace of hæmorrhage. 8 P.M.—Dr Todd wrote to me: "I am happy to say our patient looked somewhat brighter to-day than he did last night. The stump *in statu quo*, and no mottling of the skin; the glands in the groin less tense and painful; pulse 108; tongue not more unpromising, but still glistening and patchy."

16*th*, 10 A.M.—Has been restless, and had several indistinct rigors during the night; pulse 104; tongue moist and cleaning; inguinal glands remain enlarged; stump looks well. Aconite mixture to be now taken only every sixth hour *p.r.n.*

17*th* (fifth day).—Inguinal glands fallen; stump firm and solid, excepting at the centre of the cicatrice, from which, on pressure, there escaped, apparently from the deep femoral glands, about ʒvj. of creamy pus; pulse 104, soft, regular; appetite good; tongue clean and moist. At night the accession of fever that preceded the escape of pus this morning returned, when a little remaining purulent matter was pressed from the posterior part of the flaps.

18*th.*—Dr Todd writes: "The fever not so high; both wounds discharging a good deal of pus."

19*th* (seventh day).—"Pus very much lessened. He still takes the Aconite mixture, but not so frequently, nor in such large doses."

20*th* (eighth day).—Pulse 106; skin cool; has an appetite and relish for food; ordered an advance in diet; a little pus escapes from the posterior, now the only, opening in the cicatrice.

21*st.*—Stump contracting firmly. Has slept soundly.

22*d.*—Pulse 102, soft and regular; stump looks well.

23*d* (eleventh day).—Pulse 100, stronger.

24*th.*—Pulse 98; tongue clean.

28*th.*—Passed a restless and sleepless night from neuralgia in the stump connected with indigestion. Pulse 100. The stump is improved in appearance.

29*th* (seventeenth day).—Tongue clean; pulse 90; neuralgia gone; appetite good. Ordered some wine daily. Sat up to-day.

30*th.*—Still improving. Towards evening Dr Todd was sent for to see the patient, whom he found in an unaccountably depressed state, thinking himself dying. Pulse 104, very weak and small; tongue dry and furred; states that he has no complaint; stump looks quite well. Additional wine ordered, to be followed in an hour with a full dose of opium. These acted well.

31*st.*—Patient entirely recovered from yesterday's nervous depression. Pulse 90; tongue clean.

Aug. 2 (being twenty-first day after the operation).—I this day visited M‘—— for the fourth time, and found him in excellent health. His stump was healed, firm, and of a rounded form, so that I took a plaster cast of it with perfect ease to the patient.[1]

7*th.*—Patient well, and improving daily in strength and bulk. Stump sound and strong. He has since grown fat, and become an adept with the crutches, walking much faster and better, he says, than he could have done with his legs. He is preparing to enter a business establishment.

Upon the foregoing case it may be remarked,—

First, No room exists for any difference in opinion with the respected practitioners whom I met in consultation, who agreed that had the parents of the patient given their consent, *primary* amputation was the wise course to have adopted. That this was a clear case for such a step, both its previous history and the dissection of the removed limb afford ample proof. The condition, however, of the latter,—in which the scalpel laid bare extensive ecchymosis, with a lacerated and contused state of the muscles of the calf, interspersed with thick coagula that extended as high nearly as the hough, and the obstructed state of the arteries,—renders it exceedingly doubtful whether primary amputation, had it been performed *below* the knee, would have been followed by recovery, or, at best, by a recovery unaccompanied by prolonged and exhausting suppurations, and probable sloughings; though it must at the same time be admitted, that in that case the ultimate danger to life would certainly, upon the whole, have proved less than under the spreading gangrene that eventually occurred, and that rendered a more severe operation necessary.

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[1] This cast, marked with the points of entrance and exit of the four Acupuncture needles employed, is now in the Museum of the Royal College of Surgeons here.

Secondly, We cannot but regard this case, in its ultimate result, as an important addition to the surgical statistics of amputation. Mr Bryant's recent tables of the results of 300 cases, collected from the records of Guy's Hospital,[1] exhibit a difference of 15 per cent. between Primary and Secondary Traumatic Amputations *through the thigh*, these severally being as 60 to 75 *per cent.* of a fatality, and *through the leg* as 62·5 to 66·66 *per cent.* These tables show, further, that Traumatic Amputations of the Leg are at least as fatal as those of the Thigh; and, as a whole, that *secondary* amputations are more fatal than *primary*.

Thirdly, The limb was so involved in the gangrenous inflammation, that amputation lower down the thigh could not, with any hope of success, have been performed.

Fourthly, The rapid improvement in the condition of the patient immediately on the removal of the source of constitutional irritation by the operation, and by the exhibition of full doses of opium, were immediately seen in the restored sleep, appetite, and mental powers, and more slowly in the state of the pulse.

Fifthly, On the withdrawal of the acupressure needles, no suppurating points presented;[2] and the punctures, Dr Todd states, healed kindly.

Sixthly, Although the profession generally seems, as yet, scarcely prepared to admit the advantages which Dr Simpson seeks to attach to his discovery of Acupressure, yet, in due time, such additional experience will be acquired, that none, I believe, will hesitate in admitting the accuracy of his inductions. From the use that I have made of it in M'——'s case, without having seen the process previously employed on the dead or living body, the performance of acupressure seems to me to be free from all difficulty. I may add, that the hæmorrhage from the divided vessels was arrested with greater expedition in this way than by ligature; for, in closing the bleeding orifices by needles, I wholly dispensed with an assistant: and, in employing needles, I further effected a saving of blood as well as of time. And we may hence reasonably conclude that the shock to this patient's system was thereby very probably lessened, and his recovery promoted.

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[1] *Transactions of Royal Medico-Chirurgical Society*, vol. xlii., p. 67.

[2] On Acupuncturations of the body, and the absence of all inflammation and its effects, see the *Edinburgh Med. and Surg. Journal*, vol. xxvii., p. 197, as quoted by Dr Simpson in the January number of the *Edin. Medical Journal*, p. 650.

Seventhly, The face of the stump, in this case, seemed to me to close more speedily and kindly than in other cases of amputation equally high up the limb, in which I have had to deal with ligatures and their accompanying arterial sloughs. It may be objected, indeed, that M'——'s case presents no such favourable aspect; in so far as, between the fifth and the ninth days after the operation, purulent collections had formed. These, however, seemed due to the previous irritation and swelling in the lymphatics of the upper third of the thigh and the inguinal glands,—the deep probably, as well as the superficial,—dependent on the spreading of the gangrene.

EDINBURGH, *7th November* 1860.

ARTICLE III.—*The Radical Cure of Hernia.* By JAMES MORTON, M.D., Surgeon to the Glasgow Royal Infirmary.

(*Read before the Glasgow Medico-Chirurgical Society*, 9*th Oct.* 1860.)

THE extensive prevalence of hernial protrusions, and the inconveniences and dangers to which they give rise, are sufficient to surround the subject of their radical cure with no ordinary degree of interest. This has been the case at all times in respect to the young; and, very recently, a more than ordinary amount of attention has been bestowed upon a variety of operations which have been devised and actually performed for the radical cure of hernia in the adult; and it is somewhat gratifying to be able to state, that in many instances these operations have been either wholly or partially successful.

It may almost be predicted, without much hazard of non-fulfilment, that further earnest study of this matter will be crowned with success, and that at no distant period; and with the view of eliciting some discussion upon the subject, I have ventured to bring these remarks before this Society. The number of forms of operating is not by any means an encouraging feature, indicating as it does that none of them is entitled to precedence over the others; or, at all events, that such preference has not yet been attained. Probably, nay, almost certainly, the different varieties and the complications of hernia may require different kinds of operation, or modifications of one kind; and there may be cases in which any operative procedure may be extremely hazardous, and even unjustifiable.

Besides the danger always hanging over those who are the subjects of hernia, the truss is by many regarded as a very serious inconvenience; and almost every surgeon, although his experience may be limited, must have met with cases very difficult to command by any form of truss. Such being the state of matters, it is not at all wonderful that many ingenious attempts have been made towards devising some effectual mode of escaping those evils.

Efforts have usually been made to obliterate the sac; but the excision of the sac, and testicle with it—pressure by hard trusses—the use of caustics, actual cautery, and chemicals, so as to produce a slough and subsequent cicatrix—the introduction of blood, goldbeater's skin, and even isinglass—incision and excision of the sac—have all been tried without much success, but with very considerable risk. Castration, and ligature of the sac and cord together, and various other means, have also been tried. Ligature of the sac was also tried, and a form of this I shall introduce to your notice.

Gerdy's operation consists in the invagination of a fold of the skin into the neck of the sac, securing it there by ligatures, denuding the pouch of skin by liquor ammoniæ to cause them to adhere, and thus plugging the neck of the sac. It may be said to have been partially successful in some cases.

Professor Pancoast of America, U.S., makes a puncture with a small trocar and canula, and injects a drachm of Lugol's solution of iodine, or of tincture of cantharides, to effect obliteration of the sac. He has been very successful. The contents of the sac must be reduced before the puncture; and when the point of the trocar is within the serous membrane, some scratches are made on the surface; the fluid is not allowed to pass into the peritoneum, by grasping with the fingers the neck of the sac, and then by a truss which is worn for eight or ten days; and during this time the patient is confined to bed. In some cases, where the sac was large, repetition of the injection was required, and in only one was there a threatening of peritonitis.

Professor Wützer of Bonn has, since 1838, performed the operation which now bears his name, and which was introduced into this country in 1854 by Mr Spencer Wells. It consists in the invagination of the skin of the scrotum, the fascia and sac, or coverings of the hernia, which are pushed into the inguinal canal, and retained by a wooden plug, which shall be of such a size as to fill the canal as nearly as possible; outwardly a wooden pad is also used, corresponding in size and shape to the plug, and so applied as to cause the opposed surfaces of the invaginated sac to adhere, so that the neck of the sac may be plugged up and obliterated. This instrument of Wützer's has been modified by Professor Rothmund of Munich, by Mr Spencer Wells, and more recently by Mr Redfern Davies of Birmingham. It has been supplied with a perforating needle or needles, and the plug has had added to it a plate projecting from it inferiorly by a spring. Professor Rothmund lays considerable stress on the smearing of the wooden plug with cantharides ointment, to cause suppuration of the inner surface of the invaginated skin, and consequent adhesion; but this would seem to be unnecessary. This operation has been performed now in a large number of cases in this country: in most of them, the success is said to be complete; in some, with incomplete success or failure, and without mischief in any. It is applicable to almost all cases; and, even where it has failed to be completely successful, it has enabled the patient to wear a truss with benefit, which previously was useless.

Next, there is the treatment by metallic stitch,—a simpler operation, the credit of which is due to Mr Redfern Davies,—consisting also of invagination of the skin, and piercing of the doubled integuments with silver-wire sutures, one, two, or more, according to the size of the hernia, the ends of which are passed through small pieces of vulcanized india-rubber, and, after they are drawn tight, are secured by split shot clamped upon them. These wires are removed in about eight days; and, a week after, the patient is allowed to get up, wearing a light truss till the invaginated plug is firmly secured. A similar procedure is said to have been adopted by Mr Spencer Wells, in August 1858, in a case in which Wützer's operation had been performed, and had been followed by some bulging, and a threatening of a return of the protrusion. He pushed a fold of scrotum up to the external abdominal ring, and passed a handled needle along his finger, and for an inch behind the external oblique tendon. The needle, after penetrating the skin, was made to draw back an iron wire, each end of which was then secured with a skein of cotton. Seven days after, the wire was withdrawn; some amount of thickening had been produced; the truss was again applied; and a perfect cure is said to have been the result.

The plan proposed by Mr John Wood of King's College, London, is to make an incision in the skin of the scrotum, then to invaginate the fascia and sac on the finger, and pass a strong curved needle through the conjoined tendon, close to the internal ring; and the skin being drawn up somewhat, the needle is made to perforate it, and is then threaded, when it is withdrawn and guided by the finger, which pushes back the spermatic cord, behind the external pillar, and made to perforate Poupart's ligament, and then to appear externally at the former puncture by moving the skin towards that point. A loop of thread is left there, and the needle withdrawn, and again made to perforate the internal pillar, the conjoined tendon and triangular ligament, half an inch above the pubis. These ligatures are drawn towards each other, and the crossed threads are tied over a boxwood pad, 3 inches long by $\frac{3}{4}$ inch in diameter, placed over the external ring in the direction of its long diameter. The effect of this is to bring the two pillars and the sides of the canal into apposition. Lint, a stout pad, and a spica bandage are then applied. Some degree of varicocele has been observed after this operation; but this is considered a favourable sign, and due to pressure from the adhesion of the tissues.

The non-invagination of the skin is considered by Mr Wood to be one advantage of this mode of operating. The ligatures and pad are removed on the 3d or 4th day.

I have been informed that Professor Syme has tried one or two cases by invaginating the skin and sac, and using a rectum bougie for a plug, perforated by a ligature which is passed through the sac and integuments, and fastened externally. The bougie is smeared over with cantharides plaster. I cannot say what amount of success he has met with.

Dr W. B. M'Kinlay of Paisley uses a plug with a perforating needle, which is retained for three days, and then withdrawn; the needle being used to introduce a ligature as it is pulled out, which is then fastened, so as to retain the parts in situ, as placed by the pressure and presence of the plug.

It will be remarked, that besides the varied mechanical methods used to produce adhesion, several substances of an irritating nature have been employed with the view of assisting in the attainment of that result; such as strong liquor ammoniæ, by M. Gerdy and Bransby Cooper; emplastrum cantharidis, by Professor Syme and others; and a solution of cantharidine, by Mr Spencer Wells. My own conviction is that such agents are entirely useless, and certainly unnecessary so far as the production of adhesion is concerned; and if so, they become objectionable, as they add to the annoyance and suffering of the patient.

(Reported by JAMES CHRISTIE, M.A., M.D.)

P. M'I ——, æt. 31, was admitted into Ward XV. of the Glasgow Royal Infirmary, 6th July 1860.

Patient, who was admitted to be treated for a bubo on left groin, has had a scrotal hernia for three years on right side. The hernia is oblique, reducible, and very large. The inguinal canal is very much distended, and straighter than natural. Patient is constantly employed at hard work, and feels great inconvenience from the hernia. Health robust.

August 1*st*.—The bubo having been cured, a consultation was called to consider the propriety of operating for the radical cure of the hernia. Dr Morton having objections against the modes in which the operation is usually performed, the consultants agreed that he should operate as he thought proper.

August 4*th*.—Patient was removed to the operating theatre, and chloroform was exhibited. A metallic ligature was passed subcutaneously around the sac at the lower part of the inguinal canal, excluding that part only which lay behind the cord, and fixed to a leaden plate by a nipple. A compress and bandage were then applied, and patient was directed to keep the recumbent position. Hab. Pil. Opii gr. j. quotidie.

August 10*th*.—The bowels have not been moved since the operation, and the recumbent posture has been kept. On removing the bandage, considerable inflammatory action is found to have been set up in the line of the canal. There is also condensation of the tissues, and some suppuration at the point of puncture. 13*th*.—To-day, ligature was removed; otherwise as formerly noted; no bad symptoms. Omit. Pil. Opii. Hab. Ol. Ricini ℥ij.

August 29*th*.—Since period of last notice, the pad and bandage have been kept constantly applied to the part ligatured, and patient has been allowed to walk about the ward. When the compress is removed, and patient caused to cough or to walk about, the intestine is found to fill the inguinal canal, but it does not pass beyond the point where the sac was ligatured. Patient is recommended to wear a truss, and to return in a month or two that a ligature may be applied at a higher point.

September 18*th*.—Patient returned to-day to show himself. He states that since he left the hospital he has been constantly engaged at very heavy work, but that the intestine has come down only once in the interval as far as the place where the ligature was applied. He has not worn a truss as directed, but only a simple roller bandage, which from the mode of application seems to be of no service as a compress. He states that he has not enjoyed so much comfort for years.[1]

The operation performed in this case was as follows:—The contents of the hernial sac being returned, the patient, in the recumbent position, was put under chloroform; the sac was then grasped by the finger and thumb, and slightly raised; a handled needle, with the eye near its point, and furnished with a wire ligature, was introduced under the skin, and guided round the sac so as to include the greater part of the sac, if not the whole, care being taken not to include the cord; and the end of the needle being brought out as near to the point of its entrance as possible, the ligature being caught and pulled out, the needle is withdrawn.

It is plain that the needle cannot be brought out precisely where it was first inserted; and, in consequence, it is requisite to pass the end or ends of the ligature (for in this case I used a double one) again into the eye of the needle, and pass it under the skin so as to get the ends of the ligatures brought out at the same point, and there they may be tied. To give a fixed point, as well as to prevent the drawing inwards of the ligatures, I used in the above case a very small metal plate with a single nipple, over which the ligature used was fastened. I have said that I used a double ligature; and for this reason chiefly, that, in event of one being rendered unserviceable by the formation of a *kink*, I might use the other without being compelled again to use the needle. Besides, it occurred to me that the additional irritation produced by the second wire would not be injurious, but the reverse, and possibly not more than would be required for agglutination of the distended parts. Care must be taken that the ligature does not include the cord or vessels; and during the operation this can be ascertained by gently pulling the wire when the included parts are raised, and the cord can be felt below. A few days after its application, the ligature is removed. A little water dressing, or one equally simple, may be employed.

The advantages of this mode of operating are, chiefly, its simplicity, its causing little or no suffering, its effectually closing the hernial sac and causing its opposite sides to adhere, and that comparative freedom from dangerous or disagreeable consequences which is well known to accompany subcutaneous operations, and even other lesions of various parts, when the skin remains sound, or nearly so. It commended itself to me by its apparent safety, and this has been verified by at least one case. In the aged it must be difficult to procure adhesion by pressure; whereas ligature would be certain to do so, and the risk of peritonitis almost infinitesimal.

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[1] For this report I am indebted to my surgical clerk, who alone is responsible for the terms of it. The patient was shown to the members of the Society present on the 9th, one of whom, an experienced surgeon, operated in the same manner in a similar case the day following.

The objections which can be urged against the more common modes of operating induced me to adopt the above procedure. These objections we may shortly state. There is, first, the employment of a complicated instrument, which is always an objection so far as the operator is concerned; secondly, this instrument causes a considerable amount of very severe suffering, and in some cases gangrene of the parts has resulted; and, thirdly, when using this instrument there is always an invagination of skin and sac, and this is said to be liable to be pulled away from the inguinal ring by its own weight or other connections when the instrument sustaining it is withdrawn. It is right to add, however, that operations with such instruments have been frequently successful; and that, so far as known, scarcely a fatal case has occurred. At least one case is known to me in which the patient was considerably worse after than before the operation; and some statements regarding their success on the Continent have been questioned by British authors. The operation which I performed in the case now detailed may not be quite so safe in cases of femoral hernia as I conceive it to be in inguinal cases. In the former, the femoral vein is so closely applied to the hernial sac at its point of exit from the abdomen, that there may be some risk of wounding the vein in attempting to pass a sharp-pointed needle around the hernial sac.

Since the time when I operated on the above case, it has occurred to me that in some cases, especially in such as presented a large inguinal opening, the following plan might be attended with some advantages, viz., to make a valvular opening in the skin, and use one or more staple sutures. To make this more plain, let me state more fully what is meant by it:—An incision may be made through the skin a little under the abdominal ring, or point of exit of the bowel; the skin could then be easily drawn up so far as to enable the surgeon to reach the sac at the ring, when he might pass one or more staple sutures, according to the size of the opening; the free ends of such sutures lying downwards, and coming out by the original incision in the integument; these ends could either be tied close to the sac, or fastened externally to a plate of lead, and removed when they had served the purpose of the operator. Should an opportunity offer, I mean to put this proposal into practice. It does not seem to me much more hazardous than the one which I have already tried; and it is worthy of remark, that if the attempts which have been made towards the radical cure of hernia have established anything it is this, that the peritoneum, one of the most important of the serous membranes, can be perforated, at least in its diverticula or continuations, with almost unvarying impunity.

It will be perceived that the preceding case is not brought forward as a perfect cure, though such it may yet prove to be. The ligature, as thus applied, does not close the ring, but the sac; and the patient will require a truss for a time. The operation, however, seems to be as safe as it is simple (two most important recommendations), and it very materially improves the condition of the patient.

ARTICLE IV.—*Remarks on Sayre's Splint for Morbus Coxarius.*

By A. M. EDWARDS, Lecturer on Surgery, Edinburgh.

ONE of the greatest merits of British surgery is its simplicity; and anything like complicated apparatus is, if possible, laid aside in favour of some appliance which may be extemporized from materials universally obtainable and easily adjusted. Although participating in that feeling, I nevertheless venture to call the attention of the readers of the *Monthly Journal* to this instrument, as I believe it is likely to be found by them very efficient in the treatment of that wide-spread and terrible disease Morbus Coxarius.

In the treatment of hip disease, rest is undoubtedly one of the most important indications; and we endeavour to obtain it for the patient by laying sandbags along the sides of the affected limb, or by splints, generally the common long thigh-splint of Desault, fastened to the foot and round the trunk, keeping up a certain degree of extension by a perineal band. When properly adjusted, this is perhaps the best appliance now in use; but it, like every other, has its drawbacks, and is subject to abuse. Even in cases of fracture of the thigh we occasionally see painful extension kept up, the surgeon apparently forgetting that the perineal bandages should be mere check ligaments, only tense when displacement is threatened; they are not placed there to *extend*, but to *prevent shortening.* Others ignore their utility, and cast them aside, in many instances with impunity, while in others they have probably to regret doing so. It is obvious that keeping the hip-joint at perfect rest is extremely difficult, even with the long splint; which is irksome and heavy; the very nature of the disease rendering the patient intolerant of restraint, he edges away from it, it becomes displaced, and requires painful readjustment from time to time. The difficulty of moving him, for any purpose, is so great as to render necessary some change in the bed itself; and if he be very young, he writhes like a worm, and gives a great deal of trouble.

Now I believe that many of these drawbacks would be got rid of with Sayre's modification of our wooden favourite. I shall attempt to describe it with the assistance of two drawings.

This instrument consists of two flat rods of steel (see Fig. 1, *a*, *b*). Between points *c* and *d*, the rod *a* is slightly curved outwards, and also is concave on its inner aspect, this groove becoming deeper as it ascends to the expanded upper end. Strong leather is tightly stitched across it till within two inches of the top, where it is covered on the inside with chamois leather, and lodges a little pulley, which is set in a small ball and socket joint, *f*. The rod *b* supports two cog-wheels, the inner of which may be worked in the teeth at *a**, by turning the key which is seen in Fig. 2; and when the desired length of splint is obtained, the catch *g* prevents motion in either direction. The perineal band is somewhat peculiar in structure,—internally being a flattened tube of vulcanized india-rubber, stitched to a cover of strong girthing; into the latter are sewn two rings, to which is tied a piece of catgut; when the band is applied, the catgut is threaded through the small pulley *f*.

Suppose now you are about to apply Sayre's apparatus :—First take some adhesive strapping (spread on unglazed calico); cut it in strips, the length and breadth of which are in proportion to the patient's size; apply them above the knee, one on each side, in a longitudinal direction; and it is as well to place at first a few turns of a bandage over this to secure accurate adhesion; into the roller at *h* insert a small piece of bandage, fasten it to the lower ends of the strapping; the latter adheres firmly by the friction of adjacent surfaces, and enables you to extend without any circular compression. The fixed straps and knee-cap *i* seem mere appendages. After adjusting the apparatus, a moderate degree of extension is obtained by turning the key (see Fig. 2). The latter is carried off in the surgeon's pocket; and no alteration can be made without knife or scissors, till he return with it, in any of the essentials.

Last September, I was asked by one from whom I had removed some dead bone a few years ago, to see his son, who was suffering from hip disease, and seemed to be deriving no benefit from treatment. Being aware that Dr Smith, of Springfield, Massachusetts, was in Edinburgh, and had brought over with him one of Dr Sayre's apparatus, I begged that he would let me see it tried. The following are his notes of the case :—

"*Sept.* 8, 1860.—First saw Master ——, aged ——. He had suffered since January of this year from the startings and screamings at night, and continual pain from the hip to the knee, which indicate morbus coxarius. A long splint had been kept applied for thirteen weeks, with but little effect in mitigating the suffering. A distinguished hospital surgeon, who saw the case twice, had pronounced it to be one of morbus coxarius. The characteristic flattening of the nates was present. Any movement of the limb caused exquisite anguish.

"*Sept.* 11.—I applied the 'morbus coxarius' splint of Dr Lewis H. Sayre, of New York, United States. The night after its applica-

SAYRE'S SPLINT.

Edinr Med: Journal, December 1860. To face page 518.

Fig: 1.

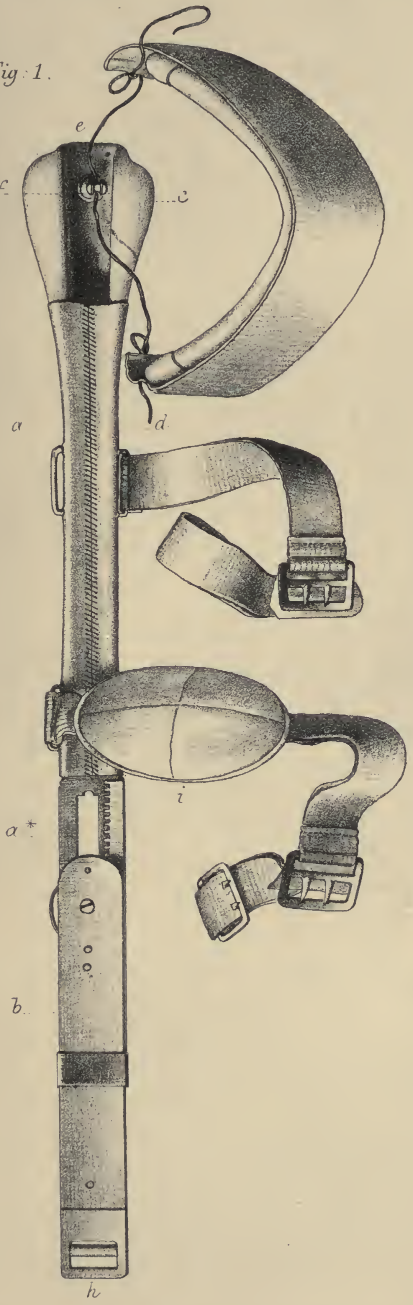
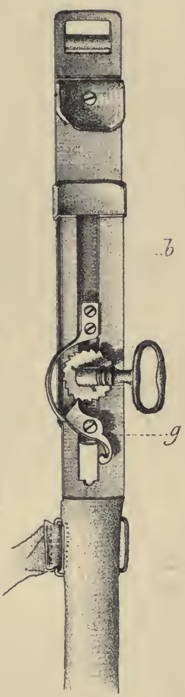


Fig: 2.



W.H McFarlane, Lithr 19 St Jas Sq, Edinr

tion the boy was perfectly free from pain, and continued so without even one exacerbation. The extension was increased until the third day from its application, when the tension was sufficiently great to effect the desired object, viz., the separation of the articular head of the femur from the acetabulum. The apparatus required no modification or renewal of the dressings, and but very little attention. I removed it two weeks and six days from the time of its application, and on careful and repeated examinations could find no evidence of remaining disease.

"*Nov.* 3.—Found the lad not complaining of any amount of pressure on the trochanter or heel, and able to move the limb, but not yet to stand upon it, which I attribute to his not having been allowed as yet to leave his bed."

Now how is this immediate and permanent relief to be explained? What is the theory of the treatment? Can it be that the adjacent surfaces of the head of the femur and cotyloid cavity are kept asunder, or is it simply the rest, or both? According to our creed, it would be almost impossible to separate the two so long as the atmospheric influences continued to act undisturbed. But we must remember that this was a diseased joint, and that great changes occur in its anatomy spontaneously in such cases; so that, however true Weber's theories may be as to the healthy, they may not invariably apply to diseased conditions (however, see *Gœdechens* in *Hamburger Zeitschr.*, vol. vi., p. 1).

After the patient has worn Sayre's instrument, he may rise with and walk about. While in bed, it occupies but little space; and the ball and socket joint, in which the pulley is fixed, allows of a degree of movement of the trunk without displacement of the apparatus; neither is it in the way of other remedies or dressings applied to the neighbourhood of the joint. I believe a modification of this instrument might be made for almost any joint in the body by any intelligent workman.

ARTICLE V.—*Case of Chronic Internal Abscess of the Lower Jaw.*

By THOMAS ANNANDALE, Jun., M.R.C.S. Eng.

WHILST staying a few months at home, during last vacation, I met with the following interesting case—chronic internal abscess of the lower jaw—which was admitted into the Newcastle-upon-Tyne Infirmary, under the care of my Father.

There are cases on record where the lower jaw has become expanded from collections of pus and other fluids, so as to form a sort of cyst; but, as far as I can learn, no case, up to this time, of circumscribed chronic internal abscess, affecting the lower jaw, has yet been fully published. The only mention of a previous case I can find is the one referred to in Mr Henry Lee's *Pathological and Surgical Essays* (page 52), which was admitted into King's College Hospital; but this case has never been fully reported.

Sir B. Brodie was the first person to call attention to internal abscess of bone, in the year 1824; and, since then, he has given an account of many other cases.[1] Most of his cases, however, occurred in the tibia, both at its upper and lower ends; none in the lower jaw.

Mr Liston, in his *Elements of Surgery* (page 216), gives the history of a patient who had this disease in the middle third of one tibia.

Mr Henry Lee (*Op. Cit.*, page 52) says, that this disease may occur in any bone of the body; and that in the College of Surgeons' Museum there is a specimen, where it had affected the clavicle; also, that Mr Arnott had mentioned a case in which the femur was the bone diseased.

There are also one or two beautiful preparations of this affection, as seen in the tibia, in the Edinburgh College of Surgeons' Museum. I have, in my own collection, a specimen, in which the head of the tibia was diseased; and have also, in my case-book, notes of a patient who was successfully treated by Professor Syme, in the Edinburgh Royal Infirmary, for this same complaint, and in the same situation.

As the following case possesses peculiar interest, I have thought it right to publish an account of it :—

William Sutherland, schoolboy, æt. 10, admitted into the Newcastle-upon-Tyne Infirmary, September 13, 1860, under the care of Mr Annandale, for a tumour of the lower jaw.

History.—The lad states that, some months ago—he is not sure how many—he received a blow on the left side of the face and nose with a stick whilst playing at school. About a week after, he received another blow with a stone on the same place, which made the face swell up.

The mother of the patient was not aware of these blows, but says, that about thirteen months ago she noticed the lad's face swelled on the affected side, and painful when touched. She thought it was merely toothache, and so did not use any means of treatment. The swelling, however, did not diminish, but rather increased; so she applied to a medical man, who blistered it twice; but no benefit arising from this treatment, she was advised to send her son into the Infirmary.

The lad has never suffered much from the swelling, and has only had a little pain occasionally. His mother also confirms this, and says that the stiffness of the jaw, rendering mastication difficult, was the only inconvenience he complained of.

On admission, a tumour, the size of a hen's egg, was found to involve the left side of the lower jaw, extending from the first bicuspid tooth to the articulation. It was very hard and firm to the touch; and, on pressing it pretty severely, pain was complained of, but not otherwise. On the external surface of the tumour were two scars, the effects of the blistering, one of which was discharging a small quantity of thin watery matter. This wound was quite superficial, and had no connection with the bone.

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[1] *Lectures on Pathology and Surgery*, page 395.

The jaws could not be separated more than a quarter of an inch, rendering mastication difficult.

The glandular system of the neck was quite healthy.

Sept. 18.—To-day, Mr Annandale made a small incision on the outer side of the tumour, including in the incision the scars previously mentioned. A gouge was then introduced into the substance of the mass, to the depth of half-an-inch. No cavity or cyst was discovered; but the tumour was found to consist of a bony mass, very dense, and hard in structure. Erysipelas being in the wards, it was thought advisable to defer any more serious operation. Cold water dressing was, therefore, applied to the wound for the present.

Sept. 25.—No change having taken place in the swelling, Mr Annandale proceeded to remove the tumour, together with the portion of jaw involved.

An incision being made through the lower lip, was carried along the lower margin of the jaw as far as the articulation. The bone was sawn through opposite the first bicuspid tooth, and disarticulation effected, though not without some difficulty, owing to a partial fibrous anchylosis of the joint. The vessels were secured, and the wound stitched up with iron sutures.

On examining the tumour removed, and carefully dissecting off the remains of muscular attachments, mucous membrane, etc., it appeared to consist of a solid bony mass, covered externally by a layer of tough fibrous tissue, which was about the eighth of an inch in thickness. On stripping this off, the external surface of the bone presented a porous appearance, resembling the callus of a fracture. Several large veins passed out from the interior of the mass, through the enlarged pores.

The section of the jaw beyond the tumour was quite healthy.

On making a section through the tumour in the longitudinal direction, a cavity the size of a horse-bean was exposed. It was filled with thick purulent matter, and was lined by a distinct membrane of some thickness. The bone around was very dense, the section of the tumour showing no trace of cancellated tissue. The cavity of the abscess had no connection with the surrounding bone, but was quite enclosed by its lining membrane.

Oct. 1.—Patient has gone on exceedingly well since the operation. The anterior portion of the wound has healed by the first intention; but the remainder, which includes the old cicatrices, has not yet become united. Stitches allowed to remain in.

Oct. 10.—Patient still doing well. Some of the sutures have been removed since last date. The wound is all healed except at one point in centre of cheek, where there is a small fistulous opening, communicating with the mouth. He has been out of bed and going about the wards for the last day or two. General health is quite good.

Oct. 20.—Is now quite well. A small fistulous opening still exists; but the rest of the wound is firmly healed, and all the sutures have been removed.

I have not thought it necessary here to give more minute details of the patient's progress since the operation, as the lad is now quite convalescent.

And now a few words as to the diagnosis and treatment of this case.

The usual symptoms of internal abscess of bone, as described by Sir B. Brodie, and others after him, have been—

(1st.) Acute pain, attacking the bone affected; this pain not being constant, but occurring at longer or shorter intervals.

(2d.) Tenderness at some particular part of the swelling.

Besides these two symptoms, the disease has generally been of long continuance. In one case, which I saw, it had existed twenty-one years.

The present case, however, seems to have possessed symptoms exceptional to those which have generally been considered almost positive of this disease when attacking other bones.

I took considerable trouble in questioning both the patient and his mother as to the symptom of pain; but, from their joint account, the patient had never suffered much pain, and never any very severe pain.

As to the tenderness, this was very slight, and only complained of on using pretty severe pressure.

We cannot be exactly sure of the duration of the disease. The only positive information I could get was, that the mother first noticed the swelling thirteen months ago, but this may not have been the commencement of the affection.

I do not think that palpation of the tumour alone in this disease would assist very much in the diagnosis.

The diagnosis of this disease will, I am afraid, be often difficult, and only confirmed after some operative measures, such as trephining or excision, have been adopted.

Lastly, of the Treatment.—There is not the slightest doubt as to the proper treatment of internal abscess of bone when occurring in the tibia or other long bones, since Sir B. Brodie, and other surgeons after him, have so successfully cured these cases by laying open the cavity of the abscess with the trephine or other instrument; but I think that the lower jaw, when affected with this disease, may sometimes require that a more serious operation should be performed.

If it were possible to diagnose a small circumscribed abscess in the interior of the lower jaw, before it had caused much enlargement or condensation of the bone, then laying open the cavity would probably be perfectly successful; but in a case like the present, where the bone had increased so much in size and become so condensed, I scarcely think that this treatment would have been sufficient, and for this reason, that even a small increase in the size of the lower jaw in the situation occupied by the present tumour would seriously interfere with mastication; and I do not think that the bone, when so much enlarged and condensed in structure, would ever regain its natural size, even after the application of a trephine. In such cases it may be necessary to remove the portion of jaw affected; but at the same time it would be proper in all cases first to try the effect of exposing the cavity of the abscess, by the trephine or other instrument, only resorting to the removal of the jaw when the former treatment had failed to produce any change in the disease.

In the case which I have reported, the first operation was not successful, for the cavity of the abscess was not discovered; if it had been, more time would have been allowed to elapse before the performance of the final operation, in order to watch the effects of the former one; but I do not think this was of much consequence in the present instance, the state of the jaw fully warranting the performance of the operation.

NEWCASTLE-ON-TYNE, *October* 1860.

ARTICLE VI.—*Notes on certain Feigned Diseases of Soldiers, and on Crime and Desertion in the Army.* By A. LEITH ADAMS, M.B., Surgeon to the 22d Regiment.

> "Which is the villain? Let me see his eyes,
> That, when I note another man like him,
> I may avoid him."

ALTHOUGH the habit of feigning disease to escape punishment, or be discharged from the army, is less prevalent now than during the Peninsular War, yet many very determined cases have lately come under notice, chiefly among the lowest class of recruits raised in London and the large manufacturing and seaport towns—the scum of Liverpool and Portsmouth, ticket-of-leave men, and such like—to whom the bounty was a tempting prize—who managed to dupe the recruiting sergeant, and, long before they had finished their preliminary drill, were off again to repeat the experiment in some other quarter. Instances are on record of individuals having carried away three and four bounties in one year. Such blackguards are made of too callous material to care for the lash or imprisonment. They set good order and discipline at defiance; and, when forced to remain in the ranks, never lose an opportunity to evade duty, or obtain a discharge from the service. On that account they often come under the medical officer's observation; and, unless he is on the *qui vive*, the deep-laid schemes of the more accomplished will be certain to deceive him. It is surprising with what proficiency many carry on their deceptions, and the amount of firmness and determination displayed in the execution; indeed, in more than one instance I have felt certain that the symptoms have been carefully copied from nature. Among the records of several cases which have lately occurred to me, I fancy there may be a few both interesting and instructive, especially to junior army medical officers, who are often called on to exercise their judgments long before experience has made the way smooth for them. However, if the following examples serve to show the importance of a correct diagnosis in such cases, and the danger of allowing one impostor to escape undetected, their end will be obtained.

John Cook, a stout and able-bodied man, aged 22, a German by birth, enlisted at Portsmouth on the 31st January 1856. Exactly two years afterwards he appeared at hospital, in consequence of alleged pain in his shoulders, which he said were occasioned by having had his arms forced backwards by the drill corporal. There was no evidence to substantiate the truth of this assertion, but much to prove that the complainant was a worthless fellow, always in trouble, and constantly undergoing punishment for bad conduct and carelessness in the ranks. He was ordered to his duty forthwith. But scarcely a week elapsed before he returned to hospital,—being then a prisoner for drunkenness. He stated that, during the previous night, in consequence of the cold and damp state of the guard-room, he had been suddenly seized with acute rheumatic pains in almost every part of his body. He could scarcely walk, and described his sufferings as intense, especially in the loins, pelvis, and lower extremities. The joints were natural, tongue pretty clean, pulse and urine normal. He gave a long and deplorable account of his illness, and finished up by informing me that he had once served in the German Legion, and was discharged in consequence of rheumatism. Day by day furnished fresh complaints of his sufferings; and at night his groans and moanings kept the other patients awake. No remedy had the least good effect, except opium, which always sent him asleep (a grain sufficing on each occasion). He was cupped on the loins, and blisters applied to his back and shoulders,—even the actual cautery failed; but he bore the treatment without a murmur. His general appearance indicated good health; appetite, pulse, and digestion normal; skin cool; body stout and muscular: there was nothing, in fact, to account for the least of his symptoms. In hopes that persuasion might bring him to a right sense of his conduct, I informed him secretly of my impression of his case; telling him, that if he returned to his duty, and never afterwards attempted to deceive me, I would overlook the offence. But I might have spared myself the trouble; for, although he made no reply at the time, I found him in bed next morning, complaining that he was worse than ever. Accordingly, he was ordered spoon diet, and strict orders given that no one should take the slightest notice of his expressions of pain, but that the louder and more vehement they became, the less food was to be given. In a day or two he began to recover, and commenced to walk about on crutches, making daily visits to the hospital yard, where on several occasions he was found in a corner enjoying his pipe. It was evident mild persuasion would never reclaim this determined schemer. I had him therefore stripped naked before the other patients, and, after my colleagues had satisfied themselves on every point, we gave it as our decided opinion that he was in perfect health, and that the imposition would no longer be tolerated. But he still remained firm in his resolves, and continued to limp about like one paralyzed, exposed to the sneers and ridicule of his comrades, until one evening, when bantered by a patient, he so far forgot himself as to hurl a shoe at his tormentor, after having asserted for weeks that he could not lift his arms from his sides. His case having been reported to the military authorities, a medical board was ordered to examine him on two different occasions within a month. However, long before the second examination, when he saw a court-martial was impending, his resolution gave way suddenly, and IN THE COURSE OF ONE NIGHT HIS SYMPTOMS ENTIRELY DISAPPEARED, and never afterwards returned. According to the Articles of War, Cook was liable to imprisonment with hard labour, and even flogging. Not wishing the latter, I frequently afterwards regretted that, from an inexplicable piece of leniency on the part of the general, he was allowed to escape unpunished, being merely told, "if he attempted the like a second time, he would be tried by a court-martial." The evil results of allowing cases of the above description to pass unpunished are much graver than is generally supposed; for the conviction and chastisement of one malingerer have great moral effects, and serve as warnings to others. The case appears to me instructive, in showing not only the depravity of the actor, but the utter uselessness of conciliatory measures, and lays down what may be considered an axiom in the treatment of feigned disease, THAT FIRMNESS AND DETERMINATION WILL ACCOMPLISH THE OBJECT, WHILE VACILLATION AND IRRESOLUTION WILL BE CERTAIN TO FAIL.

The next case is of a different character. John Wood, aged 22, healthy, stout, and muscular, enlisted at Manchester on the 18th November 1858. In June following he obtained a week's leave of absence for the purpose of visiting his parents in Cheshire. On his return therefrom, he requested his sergeant to furnish him with a pair of new trousers. On being refused, he demolished the old ones with a knife, for which he was made a prisoner, and sent to the guard-room. A few hours afterwards he began to show signs of madness, and talked incoherently during the whole of that night. On the following morning, when brought to hospital, he seemed in a highly excited state, threatening vengeance on some one, and calling out, "I'll shoot him," "I'll do for him," repeating these expressions continually, and whenever any one addressed him. His countenance was pale, and his eyes dull, cold, and meaningless,—the expression strongly indicative of cunning and low mental capacity, which a large development of the occiput seemed to confirm. These appearances were certainly in his favour, and called for a guarded opinion. The digestive organs were healthy, pulse 78, tongue clean; he slept soundly, and his appetite was good. For several days after admission his behaviour was orderly, except that now and then during night he would suddenly jump out of bed, and stare about wildly, and mutter a few incoherent expressions. A little persuasion always sufficed to quiet him, and he soon fell asleep,—a grain of morphia had an almost magic effect in that way. At times, without the slightest cause or provocation, he seized anything at hand, and hurled it at the bystanders. At one time, when walking in the hospital yard, he suddenly broke away from his keeper, and rushed to one of the patients, whom he first shook by the hand in a most friendly manner, and then struck a severe blow on the face. One of his amusements in bed was to tear his counterpane in shreds, which he exhibited "as his colours," saying "he was going recruiting;" and then, in short, incoherent language, he would inform me how they intended "to shoot him," "cut his head off," etc. He continued in the above state for upwards of a fortnight, during which his head was shaved, cupping and a large blister to the nape, with low diet,—all of which he bore without a murmur.

After a tedious and troublesome inquiry into his previous history (which, as far as the man himself was concerned, remained a mystery), at length I discovered a soldier in the regiment who had been a prisoner in Knutsford Gaol with Wood; and, on reference to the prison authorities, information was obtained to the effect "that his proper name was Green; that he was a ticket-of-leave man, and had been in gaol for a daring burglary." Moreover, his previous career was traced still further, and proof obtained of his having been in the 94th Regiment, from which he was discharged on account of mental imbecility. He had the character of being "half-witted" with his comrades, some of whom considered him a greater rogue than fool. Withal, I had very strong suspicions as to the genuineness of his symptoms. Accordingly, I adopted a plan which, in event of his being insane, seemed the most salutary, and, if an impostor, would lead to his conviction by inducing him to *over-act* his part. Consequently, the deepest commiseration was shown for him. His diet was nutritious, with a small allowance of wine, and constant and assiduous attention paid to all his wants. No sooner was this course pursued than he began most extravagant and maniacal actions, until one day, when glorying in the success of his endeavours, I directed handcuffs on his wrist, a strait waistcoat, and his diet to be reduced to bread and water. It was likewise arranged that his attendants should express to him hopes that, if he remained quiet, the restraint would be removed and his former diet restored. The result was, he became very orderly, and conducted his conversation in low tones. His demeanour towards me, always respectful, became now exceedingly affectionate, receiving me with great cordiality: he even insisted on shaking hands on each of my visits. It was soon apparent that he could be kept in perfect subjection on the slightest allusion to restraint and low diet; yet, withal, I must say the deception sat well on his visage: only his light grey eyes, instead of being turned away, as in the true maniac, were always ready to stare one out of countenance; when withdrawn, they wandered restlessly over the room; at the same time he kept constantly picking the bedclothes with his fingers, and ornamenting his person with coloured threads and straws. Sometimes he would suddenly rush towards the window, and, pointing to passers-by, break out into immoderate fits of laughing, or, like a child, direct the attention of his keeper to some object outside, as if to ask its name. However, he soon found out that his labours were thrown away when I was not a spectator; and accordingly acted his best parts of the performance during my visits, remaining wonderfully quiet and orderly in the intervals. From all the circumstances of the case, it appeared evident I had to deal with a most determined malingerer,—one who had his *actions steeled* by former success, and was only likely to be restored to duty by determined and persevering efforts. One day, when employed at his old pastime (picking threads out of his bedclothes), I had him brought into my presence (having previously arranged that the visit should be as public as possible), when, to his utter surprise, I suddenly changed my previous mode of addressing him, and, in as emphatic language as I could use, narrated to him his history for the previous six years, and stated that I should forthwith prefer charges against him for malingering. He made no reply, but his countenance spoke volumes; and in shame and confusion he was marched back to his room. Before he had been there half an hour he sent for the hospital sergeant, and begged him to take off the handcuffs, and he would promise to return to his duty and become a good soldier. Next morning he confessed his guilt to me, and attempted to excuse his conduct on the plea that he had been drinking a great deal for some weeks previous to admission. His penitence was extreme, and many and earnest were his prayers for forgiveness; yet, when a court-martial was inevitable, thinking perhaps to mitigate the punishment and influence the court in his favour, he recommenced his insane actions, and kept them up during the trial and the first few days of his imprisonment, until he was informed by the prison authorities that his character had gone before him, when he immediately abandoned the imposition, and took to picking oakum and shot drill with an earnestness worthy of a better cause. The future career of this malingerer was marked by a long train of vice and intemperance, until the regiment was leaving for foreign service, when he and another worthy sought a means of escape from the army by the committal of a crime which stamped the depravity of both; and which, if it has not been the means of sending them beyond the seas, will drive them with ignominy from the army.

There are several interesting and instructive points connected with this case. Besides the cleverness shown in the performance of the deception, his countenance and general appearance indicated a state approaching idiotcy. I have no doubt that operated in his favour when he obtained a discharge from the 94th Regiment, as he actually passed through a general hospital, and was invalided for mental disease. I did not, however, divulge this information to him, in order that he should not have it in his power to bring the circumstance forward as a proof of his incapacity to serve. Here his tact failed him, and the victory was mine. The military history of such men affords usually very little information. Their former habits must be inquired into; and the surgeon will do well not to rely too much on the opinions of their keepers, though the sooner his own is formed the greater will be the chances of a speedy termination to the case; for the impostor gathers strength every day, and, should he see the slightest irresolution, the chances are, he will redouble his efforts in order to complete the deception. As I have before stated, the medical officer's conduct must be ruled by firmness and determination, whether, as Dr Cheyne recommends, "to let the patient down easily," or charge him with the misdemeanour, and carry out the course indicated by law in such cases.

But it is evident, unless the greatest care and attention be bestowed on the case, tempered by a sound judgment and an intimate acquaintance with the symptoms of real mental disorder, the chances will be greatly in the patient's favour, and the medical attendant will have to yield to the pressure of circumstances merely from a want of confidence in his own resources, or possibly, what is of more frequent occurrence, a dread of the responsibility and serious result of such cases when brought to a military tribunal. Where carelessness exists, one cannot wonder at the success of malingerers; and I must confess I have seen more than one instance where cases of lunacy, from the stupid, half-witted recruit to the furious maniac, were permitted to hang about hospital, submitted to the observation of a surgeon who puts his trust solely on his patient's symptoms as they appeared to him during his regular rounds, never troubling himself to inquire into his previous or private history, until at length, from the continued sameness of the case and the perplexity surrounding it, he had no alternative but to bring his patient forward for discharge. In that way many a vagabond has gained his object; and not only once, but several times.

A man, in the usual fustian attire of a miner of the midland counties of England, enlisted at Manchester on the 22d June 1859. He gave his name as John Markey, and stated he had been driven to enlist from want of employment. I examined him minutely from head to foot. He was a wiry, muscular man, with a brown and olive complexion, heightened by a thick coating of coal dust, especially about the neck and shoulders. His height was 5 feet 6 inches; and he gave his age 25, but from his appearance he might have been 40. His countenance indicated great firmness, and was seamed and scarred like a prize-fighter, with a low, receding forehead, and a prominent wart on his left cheek. Small, restless, and piercing dark eyes flashed from under a pair of as coarse and rugged brows as ever deformed a human countenance. If the face is the index of the inward man, the worst vices of our nature lurked in that unseemly visage. About a week after his enlistment he was brought to me in consequence of having been found at midnight walking about half-naked in the barrack square. He stated he had become restless at night in consequence of late debauches; and, except a general silent and morose disposition, there was nothing peculiar in his appearance or behaviour. During the succeeding month he became a constant defaulter in consequence of drunkenness. After one of his debauches, and when undergoing punishment in prison, he said to the sergeant in charge of him that it had better be told to the doctor that he was subject to epileptic fits, and had been cupped on the back part of the neck,—adding, that from fear the latter would have been an obstacle to his entering the service, he had been at great pains to render them invisible; and, certainly, on the nape of the neck and between the shoulders were several marks of cross-cupping, which from the measures adopted, together with a natural dark colour of the skin, had quite escaped my attention at the primary examination. Guessing the sort of patient I had to deal with, I attempted to show him that the cupping marks were of no importance, and the epileptic fits had yet to be seen before I could pronounce any opinion as to their nature; moreover, that if he felt disposed to urge these points so as to procure his discharge from the service, I was fully determined to oppose every endeavour unless confirmed by my own observations. Thinking that would bring him to a right understanding, we parted company for a time. A watch was set on his actions; but, excepting drunkenness and debauchery, which continued as long as the bounty lasted, nothing of importance transpired until two months subsequently, when, at drill in the barrack square, he coolly stepped out of the ranks and smashed his rifle to pieces, exclaiming, "I'll be d—d if I soldier any more." I found him in the guard-room immediately afterwards, walking quickly up and down, his arms folded on his chest, and a defiant smile on his face. Now and then he stopped for a moment to survey me up and down, and with compressed lips and closed fists, as if about to assault me; but he evidently thought better of it, for, in going up to him and taking his arm to feel his pulse, he relaxed the threatening aspect, and became perfectly calm and tractable. For the next week he scarcely spoke one word, but remained in his ward sullen and peaceful. Sometimes he addressed a remark to his keeper, with the evident intention that it should reach my ears. Among others, referring to his epileptic fits, he confessed he had been in the Military Hospital at Chatham, and in the Lunatic Asylum at Bow. He spoke quite rationally, and his actions at that time betrayed no insanity.

From the authorities at Chatham the following information was obtained:—"As Francis Markey, 99th Regiment, he was transferred from the Military Prison to the Lunatic Ward at Fort Pitt on the 13th September 1855, where he remained under treatment until the 2d January 1856, when he was discharged to his friends." Although bearing marks of cross-cupping in two places on the neck, this man re-enlisted into the 64th Regiment about the end of 1857, under the name of John Martin, and was transferred to the Lunatic Asylum on the 19th February 1858, from whence he was sent to the Bow Asylum on the 22d April 1858, and thence to his friends again about the end of June 1858. He was again cupped on the neck at Fort Pitt. I was likewise favoured by the medical superintendent of the Lunatic Asylum at Bow with a detailed account of his state during the period he remained in the asylum; and, as it illustrates the character of this determined and dangerous impostor, I shall quote freely from Dr Storker's Report:—"When he was admitted he was quite coherent and rational in his replies to questions, but he soon became abusive and threatening in his language and conduct. When, however, he found that these were likely to interfere with his discharge, for which he became very anxious, he conducted himself in a quiet, industrious, and orderly manner. His case was represented as one of epileptic mania; but he had *no* epileptic attacks, or anything approaching to them, during the period he was under my care. The medical certificate sent with him to the asylum ran thus: 'Private John Martin, during the two months he has been under my care, has experienced some epileptic attacks, each of which has been preceded and followed by incoherence and most violent and outrageous excitement.' On the 30th of March last he admitted a feeling came over him that he must kill some one. He has made several violent attacks on orderlies and patients. Private Martin also admitted to Wardmaster Gould, that since his discharge from the army in 1856 he had been committed for burglary, and that he was in the House of Correction, Coldbath Fields, for breaking a policeman's leg; and he threatens to serve some one here the same before leaving, alleging that, as he is insane, no punishment can be awarded to him." It was not long before he displayed symptoms exactly similar to what have been described. Twice he essayed epileptic fits, but on each occasion was well before a medical witness could be procured. However, from the description given by the attendants, and his condition when seen by my colleague, Mr Gray, immediately afterwards, I had likewise every cause to conclude they were feigned. Dr Storker adds—"My opinion of him was, that, in every sense of the word, he was a vicious and thoroughly depraved man, unrestrained in his conduct by any moral feelings; and I cannot help entertaining a strong suspicion of his being a malingerer." Such was my own opinion after a patient inquiry, till at last I became thoroughly convinced he was a most determined impostor, one of the very worst description—old in villany, a blackguard of the deepest dye, whom no persuasion or kindness could soften, and no punishment subjugate. Having secured the character of being insane, he knew the licence it gave him, and did not scruple to employ it without reserve; yet, bad as he must have been when he first entered the army, I do believe, if his case had been then properly dealt with, all the future evils would have been averted. When about to be discharged, and during the operation of removing a seton from his neck, he informed the attendant "that he could hide any marks, and would re-enlist as often as he could obtain a bounty; in fact, he had made the army a convenience. Yet, one can scarcely imagine a few pounds would compensate for months of hospital life, on a meagre diet, with almost solitary confinement; but the gauge of ordinary men has nothing in common with such villains.

Although on the last occasion irrefragable proof of his guilt was obtained, he had still a certificate to fall back on; and, being prepared to urge his point, there was nothing for it but to send him forth once more into civil life.

I am indebted to my friend Dr Scott, of the Rifle Brigade, for the following case. It shows how readily imposition may be practised on the unwary; and, moreover, exemplifies the truth of what I have already said, that the deepest laid schemes can be frustrated if the surgeon only sets about his business in a proper manner:—John Murphy, æt. 22, in the army two years, of very irregular and intemperate habits, was committed at Malta for theft on the 29th October 1859, and handed over to the civil power for punishment. During trial he showed symptoms of insanity, and was in consequence sent to the civil lunatic asylum, where he was believed to be a lunatic, "deeply affected with nostalgy, and at times so violent and irritable as to require temporary seclusion for his own safety and for that of the other lunatics." After residing at the asylum for upwards of nine months, he was examined by two boards, composed of army medical officers, who, guided by the statements of the medical authorities of the asylum and the general appearance of the patient, gave it as their opinion that Murphy was suffering from "deranged general health and intermittent mania." In consequence, his crime was pardoned, and he was sent to his regimental hospital to await a passage to England. On the 6th June, when admitted into the hospital of his battalion, Dr Scott made the following note:—"A strong, healthy-looking man, of very evil cast of countenance; bears marks of cross-cupping for ophthalmia, which disease he produced soon after enlistment." Dr Scott goes on to say—"From the above date up to the 4th July he showed no symptoms of impaired health, mental or bodily, nor did he pretend to be insane; on the contrary, he said he was well, and never had been otherwise. At that time I intercepted a letter from the patient to his brother, which proved that the former had been malingering all along in order to get away from his regiment and the island. It ran thus: 'And now, dear brother, I am sorry to tell you that I got into trouble last September, and was taken by the civil power, but got off that by acting the fool in court, and they sent me to the Malta Asylum, where I was for nine months; and then they sent me here on the 5th June, and I have been in hospital ever since, and I expect soon to get my discharge. I had two boards of Malta doctors, but they did not get it for me, but six military doctors. I expect to be home at the beginning of October; and I shall be very glad to get away from Malta, for it is a beastly place, and from the Rifle Brigade. I think it is a very good plan I have made; and if I do not get my discharge, I will get it in some other way.'" The above confirmed Dr Scott in his opinion; and, accordingly, Murphy was tried for feigning disease, but acquitted on the evidence of the civil and military medical officers who had examined him previously. It now became a question if the patient was fit for the service; and Dr Scott, who never had a doubt on the matter, answered in the affirmative. The man was therefore discharged from hospital, and returned to his duty, which he has continued to perform with assiduity. As in the last case, Murphy's insanity fled when he found out a board pronounced him mad, and recommended his removal to England. His object was gained, and he no doubt anxiously waited for the day of his departure, little expecting that any one would dispute the verdict of the board; but "the best-laid schemes of mice and men gang aft agley;" and doubtless, had the surgeon allowed himself to have been influenced by the patient or the medical evidence, the case might have had a very different result. As it was, with a less careful and discriminating surgeon, the culprit might have escaped without any apparent impropriety.

To Dr Scott, therefore, is the sole credit due; and I must confess I envy him the satisfaction he felt on the occasion, as I applaud the firmness and resolution which in the end secured him the victory.

The above serve to illustrate the more aggravated forms of feigned disease. There are, however, delinquencies of a much less serious character, and in general easily detected; but if the surgeon is careless or inexperienced in the management of soldiers, it is surprising how soon a regimental hospital becomes filled with obscure cases of rheumatic and other diseases, or the number of men off duty and hanging about barracks convalescents. In this way the correctness of army statistics has doubtless been considerably influenced. For example, if the prevalence of rheumatism among troops serving in India is gathered from such returns, I am much inclined to doubt their validity, inasmuch as, during an experience of nearly seven years in that country, I had ample proof that a great number of the reputed cases of rheumatism and hepatic diseases of soldiers were fictitious.

By what is known as the Unlimited Service Warrant, a soldier is supposed to serve FOR EVER! but should he, on attaining 21 years' service, break down in consequence of bad health, he may be pensioned and discharged.

The consequence of this absurd rule is, as one might readily suppose, that men, on approaching their 21st year of service, find it requisite to become affected with rheumatism, lumbago, asthma, etc., beautifully expressed in the parlance of the Indian soldier, "Cape fever;" thus, by infesting hospital until he has run up a good bill of bad health, or sufficient to establish a claim to be invalided. Many, however, from having served in debilitating climates, or from other causes, although not suffering from organic disease, may still be unfit for active service, or incapable of marching ten miles, and undergoing the fatigue of a field day—in fact, somewhat worn, but more wearied of the service (for your soldier of 21 years is a mighty ancient-looking man). Such have the alternative of either going on until they actually break down like old stage-horses, or trust to the tender mercies of the surgeon, who, in his anxiety to rid the regiment of a useless soldier, finds it at the same time no easy matter to answer the imperative orders of the service, which allow no disqualification that is not based on organic disease. The soldier who has served his country for 21 years has in all conscience done enough, and ought to be allowed the means of spending the small remaining portion of his existence in "otium cum dignitate," instead of being obliged to continue at an occupation he heartily dislikes, and which brings him no increase of pension beyond a miserable pittance on the completion of five years' additional service.

Success in the management of malingerers depends in a great measure on the care and attention bestowed in the first essay. If from want of due attention on the part of the medical attendant an impostor succeeds in his first attempt, every one in future will be conducted with redoubled skill and caution. He will watch his opportunity, and mark the conduct of his doctor with studious care, whether young and inexperienced, or lazy and indifferent; so that the medical officer who values his reputation, and is desirous to retain the confidence and respect of his regiment (and he who does not has certainly a grand want of right feeling), will pause before he allows himself to become the dupe of its most worthless members; moreover, the intense satisfaction of being able to unmask villany and deception more than counterbalances any amount of trouble, or the severest trials of patience.

In the treatment of feigned disease much discernment is requisite, not only in all that pertains to the medical history, but in order to arrive at anything like a correct diagnosis. The surgeon must not be content with the bare facts of the case: he must inquire into the patient's character and habits, with the view of discovering motives for the supposed deception, and not be surprised if the military history proves nothing, for soldiers often know more of each others' offences than they are willing to tell. It is seldom the malingerer turns out a good soldier, and possibly the best thing that could happen would be to send him about his business, but not until condign punishment has been duly administered. Traces of corporal punishment or treatment, and the letter D, suffice in general to prevent the subject thereof from re-enlisting; yet it often happens, from the use of escharotics and other appliances, these marks are obliterated, or rendered similar to that of a common injury; for instance, the marks of cross-cupping and setons on the nape have been erased, and the scar attributed to the effects of burns and boils. I fear the philanthropic and social reformers of the present day will not accord us much credit for our proposals if we plead the necessity whereby the subject of ignominy, the malingerer, etc., might be prevented becoming again an expense and burden to the public. Such malefactors may re-enlist as often as they choose, and be sent to shot drill and imprisonment, which but little affect them: the former is, in truth, rather wearisome; but a military cell, in a sanitary point of view, is in general a much fitter residence for him than his barrack-room. If the deserter is marked with the letter D, why should not the malingerer and the subject of ignominy have analogous distinctions? But I pause here. The subject is generally distasteful. Let me, however, express a decided opinion, long entertained, and I think generally felt by professional brethren in the army, that superintending the infliction of ignominious marks on soldiers neither becomes the humanity or dignity of the medical profession; it is, in fine, a gaoler's, not a surgeon's duty. We are aware of more than one sturdy remonstrance on this head; and those who know of what material the medical department of the army is composed, will not wonder at their shrinking from such humiliating mandates.

A slight acquaintance with the habits and customs of the soldier suffice to show that, as long as his leisure hours are spent in gross idleness, so long will the high standard of vice and immorality continue; nor are we to expect that the best directed measures will have much influence on the old soldier. It is on the recruit, before contaminated by the example of his senior, that we can hope to be successful; and that can only be accomplished by the strictest and most persevering efforts to raise his moral and social position. It is surprising how little has been done in either way, and how much it has been the custom to ignore any description of physical and intellectual improvement in the army. More soldiers desert on account of the irksome restraint discipline imposes than from the actual severity of the duty. We are struck by the mortality in the army, and, after years of neglect, are setting to work to give the soldier more space and more fresh air in his barrack-room: let us turn our attention likewise to his mind.

Among all the morbid influences which assail him, how little has been reckoned on the cankering ulcer "ennui," which has driven so many to desert, so many to drink, to go to hospital, and not a few to self-destruction! The etiologist and student of psychology will here find a proper field,—beset, however, with all the difficulties incident to a *new and little-known* subject. Methinks, tracing the cause of desertion, crime, etc., we must not, as hitherto, content ourselves with the idea that they are the results of a naturally depraved and vicious nature. Bad as he is in that respect, and often incorrigible, he has at the same time little to thank us for either in the way of advice or encouragement. The iron rod of discipline and the cold shoulder of routine have been hitherto the soldier's only monitors. What has been the result? Inquire into his social habits, for there lie the roots of many of the evils. So much has observation confirmed my belief on this head, that I hesitate not to assert that idleness has done more towards the production of sickness and crime in the British army than perhaps any other cause; nor has the wearisome drill been without its effects, so dull and monotonous, that often the most indolent cannot endure its sameness. Who know the ordeal a recruit undergoes at the hands of a drill corporal,—the heart-burnings, smarting and humiliating censures which assail him at the onset of his military career, mayhap fresh from an English village, where in simple but manly guise he spent his former years in all the freedom of a rural swain? Such are faint tracings of a picture of everyday military life, without its lights and shades. There are many more of the same sort, only differing in intensity; but further it does not behove me to expatiate. If I have pointed in the right direction, I have done as much as needs be, at least for the present. The voice that will tell must come from high places, and doubtless come it will in right good earnest; for science and social improvement must in their progressive course break the trammels of routine, the persistent parasite of the good old army school, which pledged its belief on anything old, and condemned anything approaching an innovation. Sanitary science will likewise exert her benign influence, untrammelled by self-opinionated and wrangling officials, and advocated by men whose zeal and ability are their best recommendations. Thus, by strict attention to measures calculated to raise the physical, social, and intellectual condition of the soldier, we shall find a great improvement, not only in the health, but likewise in the morals and discipline of the army.

ARTICLE VII.—*Case of Intestinal Worms terminating Fatally.* By HENRY R. BLAIR, M.D., L.R.C.S.E., Girvan.

ON February 3, I was requested to see J. S——, æt. 3 years, a strong and healthy child who had been complaining for about a week. Nothing, however, was observed by the parents to excite apprehension until the 1st of February, when she passed a large round worm. For the next two days she was able to run about, but was so ill on the evening of the 3d, that confinement to bed was necessary.

Upon examination, I found she complained of colicky pains all over the abdomen, which was swollen and tympanitic. The tongue was covered with a dark-brown fur. There was a great desire for drink, and large quantities of cold water had been taken without any relief to the thirst. There was also slight fever, but had slept well the two previous nights. The breath had a very unpleasant odour.

The bowels had been well moved by an infusion of senna, but the evacuations were very dark and offensive.

Appetite bad, and very little food taken for the last few days.

I ordered the following powder to be taken at once:—

℞ Pulv. Jalapæ gr. vi.
Calomelanos gr. iii. ℳ.

A dose of castor-oil to be given in the morning.

February 4.—On my visit this evening the powder had acted well, but there was no appearance of any worms. Pain and swelling of the abdomen still continues. The powder and oil to be repeated.

February 5.—Still continues fevered and pained. No appearance of any worms. Powder to be omitted, and eight drops of Tinct. Ferri Mur. to be taken three times a day.

February 6.—No appearance of amendment. She continues fevered, and had spent a very restless night. No complaint of pain in the abdomen. Pulse full, but regular.

As she had taken little or no nourishment for the last two days, a small quantity of wine was allowed three or four times a day. A powder to be taken to-night, with castor-oil in the morning. The Tinct. Ferri Mur. to be continued.

February 7.—This morning I was informed she was much worse; and on my arrival found that a large worm had been vomited not long before. It was one of the Ascaris Lumbricoides, and was about six inches in length. It was alive when vomited. The patient was evidently much weaker, and seemed quite prostrated by sickness. There was nothing alarming in her appearance, however, except the excessive sickness; answering readily when spoken to, and taking anything when told. The pulse was weaker, but not over a hundred beats in the minute.

Vomiting occurred now and again, and, consequently, very little food or medicine could be retained on the stomach.

At 3 P.M. she vomited another worm similar to the former. At this time she retained a little wine, and afterwards some medicine.

Towards the evening she continued to grow worse, and was evidently sinking fast, notwithstanding the administration of stimulants.

She died about 1 A.M., being conscious to within a few minutes of her death.

The above case, I think, is of interest, showing in how short a time the Ascaris Lumbricoides may occasion death in a child previously in good health.

Intestinal worms are not thought dangerous to life by the medical writers on diseases of children.

Dr West, in speaking of this affection, says, "It will not be necessary to say much respecting them—*i.e.*, intestinal worms—for we know that the older medical writers greatly overrated their frequency and importance, and even attributed to their presence many forms of serious disturbance of the nervous system. Still they are in many instances the occasion of considerable discomfort."—*West on Diseases of Infancy*. Lecture xxxvii.

Other writers mention that death may happen by the supervention of convulsions; or, more rarely, by the worm crawling upwards and getting entangled in the glottis, thus causing asphyxia. In this case nothing approaching to an attack of convulsions was observed during the whole course of the illness, and the breathing was uninterrupted to the last; the child appearing to die from mere failure of the circulation.

It is very likely that the worms were numerous; and, from their large size, they would consume the small amount of nourishment the child was capable of taking during the few days of its illness.

It will be observed that the administration of steel with purgatives had no effect in their destruction, as the two above mentioned were alive when vomited, and continued so some time afterwards.

ARTICLE VIII.—*Case of Abscess of the Larynx.* By GEORGE THIN, M.D., Pennicuick.

ON the 2d August 1859 I was asked to see a boy, aged seven, of whose illness I received the following history :—

For a considerable period he had been more or less affected with difficulty of breathing, for which he had been treated in Edinburgh by the family attendant; and on two occasions was seized with spasmodic dyspnœa of a very alarming character, supposed to have been induced by deranged digestion. After the second of these attacks he was seen, in consultation, by an eminent physician, who recommended him to be sent to the country, and, when there, to be put under the following treatment :—

Successive blisters were to be applied over the throat; the Syr. Ferri Iodid. to be exhibited internally; and a sponge soaked in a solution of lunar caustic to be passed daily into the larynx. This treatment I immediately put into practice.

When I saw him he presented many of the external characteristics of scrofulous disease. His countenance was pale, and his body emaciated and ill-developed. He was in good spirits, and spent the most of his time out-of-doors. His only symptom was constant dyspnœa, both inspiration and expiration being accompanied by a loud hissing noise; so loud as to disturb the sleep of those members of the family who slept in the same apartment. He kept his mouth constantly open.

His voice was thick and indistinct, but there was no hoarseness. He had an excellent appetite, and swallowed without difficulty.

I saw him daily for a fortnight, without noticing any difference in his symptoms. During that period he had had one or two spasmodic attacks at night, but not so severe as those he had in town.

I saw him on the 15th August, and, as usual, passed the probang into the larynx, and almost immediately left him, but was hurriedly recalled before I had gone a hundred yards. When I re-entered the house I found him running wildly about the room, evidently delirious, and his face and lips almost quite black. Thinking the attack might be merely spasmodic, I ordered a warm fomentation to the throat, but before this could be applied he fell motionless on the floor. As soon as I had called in a medical friend who was waiting outside, I began the operation of tracheotomy, and after considerable difficulty, from the extremely congested state of the veins and a slight enlargement of the thyroid body, made an opening into the trachea, and began the performance of artificial respiration. In a few minutes he began to breathe spontaneously, and continued to do so for about twenty minutes. Owing to the depth of the trachea, and the want of proper instruments, I had great difficulty in keeping the trachea open, and before I got a tube life was extinct.

The following evening I examined the larynx, but as my time was very limited, on account of the removal of the remains by an early train, I was unable to make a minute examination. For the same reason I did not examine the thorax. I found the rima glottidis completely filled with thick glutinous purulent matter, and immediately beneath, and partly involving the right vocal cord, there was an excavation about the size of a pea filled with pus of a similar nature. All the other laryngeal structures were healthy.

The facts connected with this which seem to me to be worthy of note are the following :—

1. The absence of hoarseness. This alone distinguished it from a common case of ulceration, especially when taken in connection with the constant dyspnœa.

2. The passing of a probang into the larynx is not a procedure to be indiscriminately followed. In the present instance there is no doubt as to its having hurried on the fatal catastrophe.

3. In cases like the preceding, laryngotomy is much preferable to tracheotomy. It is more easily and quickly performed, and there is far less risk of hæmorrhage into the bronchi. The *post-mortem* examination showed that an opening between the thyroid and cricoid cartilages would have been below the seat of suffocation.

Part Second.

REVIEWS.

Clinical Lectures on certain Acute Diseases. By Robert Bentley Todd, M.D., F.R.S., late Physician to King's College Hospital, London. London, 1860.

Foundation for a new Theory and Practice of Medicine. By Thomas Inman, M.D., Lecturer on the Principles and Practice of Medicine; Physician to the Liverpool Royal Infirmary. London, 1860.

The practice of medicine, in the present day, is in a somewhat unsettled condition. During the last thirty years enormous progress has been made in anatomy, chemistry, physiology, and the other allied sciences. Diagnosis has been brought to a high degree of perfection, and the changes which take place in diseased organs have been minutely studied. The result of all this is, that the science of medicine appears at length to be established upon a firm basis, and to be gradually assuming a consistent form. For many ages, pathology was a mere expression of the philosophical opinions of the period; if a controversy arose, the parties engaged trusted to their powers of argumentation, or referred for support to the doctrines of the ancients; no one thought of making a direct appeal to nature. But a great change has taken place; no statement, however plausible, is now accepted, unless the grounds on which it claims reception are satisfactory: the most ingenious theory must consent to be weighed in the balance of the chemist, or scrutinized by the microscope of the histologist.

With all this, therapeutics, to which all the other branches of medicine should be subservient, have not advanced in the same proportion. In fact, the first effect of the coarser pathology, especially of the study of morbid anatomy, was rather to induce despair than to inspire confidence. When studying after death, the changes in the diseased organs, the physician, instead of being surprised at the fatal termination of his case, was rather led to wonder that life had been maintained so long. He found a mitral orifice so contracted, as barely to admit the point of the little finger, and his wonder was that the circulation had been carried on at all. He found the liver or kidneys indurated and contracted, their glandular substance in great part replaced by a dense fibrous tissue; and it was easy for him to see that a performance of the natural function of these organs must have been impossible. But, at the same time, he saw with dismay, how vain his efforts must be to obtain a radical cure in such cases. He possessed no remedies, and he could scarcely hope to find any remedies, which should have the power of enlarging the contracted orifice, or of restoring the disorganized glands; and, under such circumstances, it was but natural that he should entertain a feeling of despondency. Thus it was that the first effect of the study of morbid anatomy was to make the treatment of advanced organic diseases be viewed as hopeless: symptoms might be palliated, but the material lesion appeared unassailable. Occasionally, however, some cheering facts were discovered,—such, for example, as the frequency of the spontaneous cure of tubercle. Still, the result of a too exclusive study of morbid anatomy was to generate a distrust in medicine; and in some of the great pathological schools of the Continent, the system of treatment was gradually influenced, until it became, in some hands, almost entirely expectant. And such must always be the result when the treatment of disease is guided too exclusively by the morbid appearances found after death. Not that we would for a moment undervalue the importance of morbid anatomy, or would refrain from availing ourselves of every opportunity of instituting *post-mortem* examinations. But it must be borne in mind, that on the dissecting-table we do not see disease itself,—we only see its results. We see the organs in a condition which proved incompatible with the life of the individual, a condition over which medicine could exercise little control.

It is not surprising that many of the most distinguished members of the profession should have felt a distaste for the practical applications of medicine, and should have directed their special attention to the advancement of diagnosis and pathology. Under these circumstances, the study of therapeutics has been comparatively neglected, and this, the most important department of medical science, has been left to follow the others as it best could. This result was in some degree a necessary one, for the discovery of principles must always precede their practical applications; and no system of therapeutics worthy of the name is possible in the absence of a well-established pathology. But now, since the theory of medicine has been cultivated with so much success, it is to be hoped that many may devote themselves to the special study of therapeutics. The subject is a vast one, but there is none more worthy of the attention of the physician. Pathology and diagnosis present in themselves a scientific interest, but it is their practical application to the treatment of disease which renders them valuable to the practitioner. A knowledge of the nature of disease, and an acquaintance with its symptoms, are but means; the true end of medical study is the cure of disease, or the relief of suffering.

Nevertheless, a great change in the treatment of disease has taken place within the last twenty years. Neither bloodletting nor mercury is any longer considered a panacea either in acute or chronic diseases. At the beginning of the century, and for many years afterwards, scarcely any one thought of treating a case of inflammation without abstracting blood largely, and probably repeatedly. Mercury was given indiscriminately; we have seen an hospital physician, after examining a case which baffled his diagnostic powers, conclude by prescribing a course of mercury, under the impression apparently that it might do good, and was not likely to do much harm. The same medicine was, as a matter of regular routine, employed in the treatment of every case of syphilis, while at present not a few look upon the mineral as little better than a poison, in venereal and in all other diseases.

That a great change has taken place in practice is undoubted. With regard to the causes which have led to this change, there is much difference of opinion.

We have no doubt but that one important element in the change of practice, is the reaction against the over-active treatment previously enforced. One of the first symptoms of this reaction was the favourable reception given to homœopathy. It was in vain that the regular practitioner inveighed against the doctrines of Hahnemann, and predicted a certainly fatal termination to all cases of acute disease treated according to his dogmas; the new system nevertheless made converts in abundance, and the public saw that the prophecies of its opponents remained in great part unfulfilled.

At last, though after a longer time, the members of the medical profession began to see the same thing; they found, to their surprise, how nature, left to herself, could do at least as well as when attempted to be forced by all their paraphernalia of drugs. Homœopathy, in fact, when practised fairly (but how many sincere homœopaths are there among its professors?), is a vast experiment, in which the sick are put into favourable conditions with regard to diet and regimen, and disease is allowed to run its course. The result of this experiment has been to show that the powers of nature are sufficient, in many cases, to effect cures, and are far more to be trusted to than the treatment supported by a blind empiricism or enforced by a false pathology. That this has had a great, though often an imperceptible influence, on modern therapeutics, we have not the least doubt; it has, with many men, gone far to foster that distrust in the action of remedies, to which we formerly alluded.

The theory of a change of type of disease, as maintained by the late Dr Alison, is by many supposed to account satisfactorily for the modification of the old antiphlogistic treatment; while Dr Bennett and his followers deny that any such change of type has taken place. Into this controversy we do not propose to enter, further than to remark, that we see no difficulty in conceiving how such a change of type is possible. In one sense, inflammation is always the same; yet we all know how its effects upon the constitution, and even the train of its local phenomena, may vary under different circumstances. We see how, in two individuals apparently in the same state of health, an attack of pleurisy may in the one terminate in the organization of a plastic exudation, and the formation of adhesions, and in the other in the degeneration of the exudation and the establishment of empyema. We see, too, how dysentery, diphtheria, inflammation of the serous membranes and of other tissues, to say nothing of the exanthemata and other febrile diseases, may appear among large bodies of individuals with very different characters at different periods,—at one time being accompanied by symptoms of vigorous reaction, at another displaying from their very onset a more or less typhoid character. We therefore see nothing either impossible or improbable, *à priori*, in the supposition that a periodical or other change of type may affect the whole class of inflammatory diseases.

The two works, the titles of which we have placed at the head of this article, are written with a view to recommend the supporting, in preference to the lowering, plan of treating disease. While agreeing on this point, they are in other respects about as dissimilar as possible.

A peculiar interest attaches to "The Clinical Lectures in certain Acute Diseases," which made its appearance but a few days before the death of its lamented author. Few men in our own day have worked harder to promote a knowledge of the science and practice of medicine than Dr Todd. As an original investigator, as an author, as a lecturer, as an hospital physician, and as a clinical teacher, he devoted himself with a rare assiduity to the cultivation of his profession. The volume before us is the third of a series of clinical lectures,[1] and embodies his most matured views with regard to the treatment of acute disease.

The following quotation from the preface, embracing the conclusions which he had arrived at, will explain better than any words of ours, the views entertained by their author :—

> 1. That the notion so long prevalent in the schools, that acute disease can be prevented or cured by means which depress and reduce vital and nervous power, is altogether fallacious.
>
> 2. That acute disease is not curable by the direct influence of any form of drug or any known remedial agent, excepting when it is capable of acting as an antidote, or of neutralizing a poison, on the presence of which in the system the disease may depend (*materies morbi*).
>
> 3. That disease is cured by natural processes, to promote which, in their full vigour, vital power must be upheld. Remedies, whether in the shape of drugs which exercise a special physiological influence on the system, or in whatever form, are useful only so far as they may excite, assist, or promote these natural curative processes.
>
> 4. That it should be the aim of the physician (after he has sedulously studied the clinical history of disease, and made himself master of its diagnosis), to inquire minutely into the intimate nature of these curative processes—their physiology, so to speak—to discover the best means of assisting them, to search for antidotes to morbid poisons, and to ascertain the best and most convenient methods of upholding vital power.

While admitting that there is much truth in these propositions, we can by no means give them our unqualified assent, and still less can we agree with the author as to the propriety of the treatment which is founded upon them. We do not agree with the second proposition, which seems to take for granted that every acute disease depends upon the presence of a poison ; and although we are strongly impressed with the importance "of upholding vital power," we are by no means prepared to grant that the treatment recommended by Dr Todd is the best calculated to attain this end.

Fourteen lectures are contained in this volume, which are founded upon ninety-three ably recorded cases.

The first three chapters are devoted to the consideration of acute rheumatism. Dr Todd's opinion of the pathology of this disease is, that it depends upon the accumulation in the circulation of a peculiar morbid product (probably lactic acid, or some analogous substance), the result of a vitiated state, either of primary or secondary assimilation, or of both ; that this matter accumulates in greatest abundance in those parts which present the least obstruction to its escape from the circulation, such parts being in particular the synovial and serous membranes ; that this diseased matter, being of an irritant nature, is apt to excite inflammation in any of the localities where it accumulates; and that the more the elimination of the morbid matter is encouraged at the skin, the kidneys, the joints, and the mucous membrane of the alimentary canal, the less likely are the more important parts to suffer. The treatment founded upon this pathology consists in the administration of opium to act upon the skin and soothe the nervous system, of large doses of bicarbonate or acetate of potash to encourage the action of the kidneys, and render the urine alkaline, and of an occasional purgative to keep the bowels moderately loose; the affected joints meanwhile being enveloped in cotton wool, surrounded with oiled silk, and a blister being occasionally applied.

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[1] The two former volumes were—*Clinical Lectures on Paralysis, Disease of the Brain, and other Affections of the Nervous System* ; London, 1854. *Clinical Lectures on certain Diseases of the Urinary Organs, and on Dropsies* ; London, 1857.

The above treatment, which is indeed that generally adopted, appears to us to be very judicious; but, in several of the cases recorded by Dr Todd, it appears to us that positive harm was done by the too free employment of opium and stimulants.

Continued fever forms the subject of the fourth and fifth lectures. Dr Todd recognises and describes the three forms of typhoid, typhus, and relapsing fevers. The principal indication of treatment is thus expressed:—

> From the first moment of your attendance let it be your constant and anxious effort to uphold the vital power of your patient, by nitrogenous food given as broths, and carbonaceous food, selected from farinaceous substances, and from alcoholic fluids such as wine, brandy, or other fermented liquors.—P. 180.

Twenty-four observations of fever are recorded, and in all the treatment is characterized by the free, in some cases the enormously liberal administration of stimulants. One little girl, fourteen years of age, "took as much as an ounce and a half of brandy every hour for three days together, and for the next fortnight half an ounce was hourly administered;" while even this quantity is exceeded in the case of another patient, a young woman of eighteen, who for four days took an ounce of brandy every half hour. We cannot at present enter into the general question of the use of stimulants in fevers and other acute diseases; but we must say, that the results of Dr Todd's practice would not induce us to follow his example in administering them so freely, for we find that, of the twenty-four cases of fever recorded, no fewer than eleven proved fatal.

The two next chapters treat of erysipelas, and a rare form of erysipelatous affection of the fauces. The latter disease is thus described:—

> If you look into the throat of a patient labouring under this affection, you will find the pharyngeal mucous membrane exhibiting a peculiar dusky red colour, the fauces will be perfectly open, and you will be unable to discover any mechanical impediment to free deglutition; and if, now, with your finger, or a pen or probe, you touch the back of the pharnyx, you will find that none of the pharyngeal muscles are thrown into action, as they invariably are in a state of health: in other words, you cannot excite the reflex actions necessary for de-

> glutition; and if you give the patient something to swallow, as soon as he gets the liquid or solid, whichever it be, upon the back of the tongue, instead of its being grasped by the contraction of the muscles of deglutition, and guided, as it were, into the œsophagus, in consequence of the complete palsy of these muscles, it falls by its own gravity into the larynx, and is thence immediately ejected, by a powerful expulsive effort, through the mouth and nostrils.—Pp. 229–30.

The treatment recommended consists in the application of nitrate of silver to the back of the fauces, the employment of nutritive enemata, and the administration, as soon as the power of swallowing begins to return, of large doses of brandy, ammonia, chloric ether, and beef-tea. In reference to the treatment of erysipelas, we may mention that Dr Todd entertains a very low opinion of the virtues of the tincture of the muriate of iron. Having divided cases of erysipelas into five groups, according to their severity, he says:—

> Some attach great importance to the use of the tincture of sesquichloride of iron in this disease. I have no doubt many cases, such as those which I have placed in my first group, will get well under that drug, partly and mainly because it excludes depressing treatment, partly, perhaps, from some tonic power in the medicine; but I would as soon think of trusting to it in the treatment of the third or fourth group of cases, as I would to the billionth of a grain of aconite, or arnica, or sulphur, or any other homœopathic absurdity. The remedy, so far as I know, is unobjectionable in itself, but its power to do good is small; and if you try it, let me advise you not to trust to it alone, but merely to use it as an adjunct to the treatment which I have endeavoured to impress upon you to-day. For, as I before said, there is a large class of cases of erysipelas which will get well without any treatment whatever, and, indeed, in spite of depressing treatment, either because the dose of the poison which these patients have imbibed has been very small, or because their powers of resisting acute disease are very great. In such cases you may, if you like, amuse yourselves with giving a remedy of the nature of sesquichloride of iron. But in all severe examples of the malady, place your trust in food and brandy, freely given under careful regulation, and adopted from the very commencement of the attack.—P. 216–17.

Perhaps Dr Todd speaks rather too slightingly of this remedy; still we should be far from reposing confidence in it alone in a severe case of the disease.

The eighth is in some respects the central chapter of the volume. It is headed, "On the Treatment of Acute Internal Inflammations," and is founded on a case of rheumatic pericarditis, endocarditis, and pneumonia. It was originally published in Dr Beale's *Archives of Medicine,* and excited a good deal of attention at the time. It contains an abstract of the author's views, and, of course, urges the advantages of the "upholding" plan of treatment. One short quotation will be sufficient:—"You must feed inflammations as you would other active vital processes. You must, that is, feed them to prevent them from extending to, and preying on, healthy organic structures, and committing great destruction" (p. 262). Apply this principle to the treatment of an inflammation where the effect will be readily recognised; let us say gonorrhœa. Every one who has treated this disease must remember cases where the patient was all but recovered, where the irritation had subsided, and the discharge had disappeared, yet where a slight indiscretion, the taking a glass or two of wine or a little spirits, has been speedily followed by a return of the symptoms with nearly all their pristine severity. No surgeon, we opine, would think of "feeding" an acute gonorrhœa; and as the pathology of all inflammatory affections is the same, we must altogether decline to accept the dogma of Dr Todd.

The ninth chapter treats of pyæmia. Dr Todd does not enunciate very clearly his views with regard to its pathology; he seems to think that the presence of a poison in the blood accounts for the depraved nutrition of the affected parts, while obstruction by emboli may explain the localization of the lesions. The indications of treatment are very clear; to use Dr Todd's words, they "may be summed up in one word—support." With this we entirely agree; the disease is attended with extreme prostration almost from the very first, and the only chance of a favourable termination consists in supporting the patient's strength until the poisonous matter can be eliminated. Such cases, we maintain, are on a very different footing from cases of ordinary fever or inflammation, yet Dr Todd makes no real difference in the treatment; all are to be plied alike with stimulants; and it does seem incomprehensible that the same treatment should be equally applicable to such very different circumstances, as the prostration of pyæmia, and the period of reaction in erysipelas or continued fever.

The next four chapters are devoted to the consideration of pneumonia. Although Dr Todd agrees with Dr Bennett in denying that a change in the type of acute disease has taken place within the last thirty years, his views of the pathology of inflammation are in a fundamental point the opposite of those of the Edinburgh Professor. One of Dr Bennett's propositions, on which he rests his objections to the views of Dr Alison, is as follows:—"An inflammation once established cannot be cut short, and the object of judicious medical practice is to conduct it to a favourable termination."[1] Dr Todd, on the contrary, believes that pneumonia (and, no doubt, every other form of inflammation) may be cut short at any stage. He says:—

> Recovery may take place in any stage of pneumonia. It generally follows red hepatization, and nothing is more extraordinary than the rapidity with which a lung will pass from the state of red hepatization to that of health. The way in which this change occurs is probably this: a fresh effusion is poured out, which, consisting chiefly of serum, dissolves the plastic material with which the cells and finer air-tubes were previously blocked up; a portion of this is reabsorbed, while the remainder is quickly expectorated, the dilated capillaries gradually resume their natural size, and the lung returns to its normal condition.—P. 375–6.

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[1] *Principles and Practice of Medicine.* Third Edition. P. 282.

It is certainly inexplicable how two physicians, entertaining such very opposite views of the pathology of a disease, should yet recommend what is, so far as supporting the strength goes, essentially the same plan of treatment. Dr Bennett's position is far the more logical of the two; for whether his pathology be correct or not, it forms a rational foundation for his practice.

For the treatment of pneumonia, Dr Todd recommends large doses of the liquor acetatis ammoniæ to promote diaphoresis, occasional doses of mild aperients, combined with free counter-irritation by the application over the dull regions of flannels soaked in warm spirits of turpentine, kept on for half an hour at a time. To support the strength, good beef-tea or other animal broth is freely administered. "*Though*," says Dr Todd, "*the exhibition of stimulants does not form a necessary part*" of the treatment, yet, when the vital powers are clearly depressed, with a pulse *increasing in quickness*, or when the patient has been previously accustomed to live well, or in the habit of indulging in the use of alcoholic drinks, then wine or brandy, or, what is really the proper way of expressing it, *alcoholic food*, must be exhibited." (p. 417). The individual with reference to whose case these observations were made, was admitted on the fifth day of the disease; he was at once put upon half an ounce of wine every four hours. On the eighth day unfavourable symptoms manifested themselves, "and, in consequence of the feeble character of the pulse, he was ordered half an ounce of brandy every hour, with a draught every third hour containing five grains of sesquicarbonate of ammonia, with half a dram of chloric ether" (p. 419). The patient died three days afterwards.

We cannot say that the statistics adduced by Dr Todd, from cases of pneumonia occurring in his own practice, are calculated to impress us with the success of the treatment adopted. The following paragraph gives the results alluded to :—

> The cases are, in all, 78, and they have been taken just as they have been noted down in the case-books. They may be arranged into two periods; the one from 1840 to 1847, the other from 1847 to 1859. In the former of these, which may be termed *the period of reducing treatment*, the remedies employed were bleeding, the application of blisters, the exhibition of tartar-emetic, and the more or less free use of mercury; while in the latter, which may be styled *the period of supporting treatment*, the patients were treated very much in the manner which I have detailed to you in this and other lectures on this subject, though in a few cases calomel and opium were given. Now, the total number of cases, as I before mentioned, was 78, and of these 10 were fatal.
>
> Remember that I am now merely stating the leading points in the report, for time will not permit me to enter into any lengthened detail. Of the 78 cases, 25 occurred in the first period, and 4 of these proved fatal, or about 1 in every 6. In the second, the number of cases was 53, and in these there were only 6 deaths, or about 1 in 9; fairly leading, I think, so far as we may judge from the relative mortality in these two periods, to the inference, that the supporting plan of treatment is more favourable (certainly not less favourable) in its results than the severer measures which are frequently had recourse to in this disease.—P. 436–37.

Of these results it will probably be sufficient to say that they are not equal to the success of Grisolle or Dietl, the former treating his patients by venesection, the latter by diet alone. Grisolle treated a group of 50 cases by bleeding in the first stage of the disease only; of these, 5 died, giving a mortality of 1 in 10. Dietl treated 189 cases by diet only; the result was a mortality of 1 in 13½. It thus appears that the mortality under a system characterized by excessive stimulation is actually higher than when, on the one hand, moderate depletion is practised early, or, on the other, when the cases are left entirely to nature! Can anything show more clearly the positively bad effects of the stimulating plan?

The fourteenth and last chapter is entitled, "On the Therapeutical Action of Alcohol." To it, however, we do not propose at present to allude further.

While differing from Dr Todd very widely as to the merits of the treatment he adopted, we can cordially recommend this volume as well worthy the attention of our readers on various other grounds. It contains many interesting cases, which are recorded with great care, and these are illustrated by valuable observations on the pathology and diagnosis of disease. We would particularly refer to several cases of pneumonia, in which an analysis of the urine was made daily, and in which are interesting remarks on the absence of chlorides from the urine, and their presence in the sputa, and the exudation into the lung. The book, like Dr Todd's other works, is written in a clear and attractive style; and in taking leave of it, we can only express our regret that its author was not spared to modify the therapeutic opinions expressed in it.

"Foundation for a New Theory and Practice of Medicine" is an imposing and attractive title. We confess, however, that we took up Dr Inman's volume with considerable misgivings. We did not believe that a new theory of medicine was to be established, or a new practice of physic elaborated, by any single individual. Having perused Dr Inman's work, we remain even more strongly of the same opinion.

We shall best express Dr Inman's views by quoting two or three of the twenty-six propositions which it has been the object of the work to establish, and which are to be found at the end of the last chapter:—

1. That the phenomena of life are due to a definite *force*.

2. That the vital force is not identical or correlative with any other known force.

9. That the presence of disease implies impairment of vital force.

13. That any plan of medication which produces a steady diminution of vital power must necessarily be bad.

19. That it is unphilosophical to employ means to restore the vital force in a part, if we are doing anything to depress it as a whole, and *vice versâ*.

25. That thoughtful physicians of the present day have shown a steady tendency towards the improvement of their science, and that that improvement has been manifested by a departure from the frightfully depressing means,

once so popular, and an adoption of a plan of an opposite nature; by a desire to conserve the health, by keeping up the systemic powers, rather than by an attempt to re-invigorate a jaded constitution by refreshing draughts of senna-tea, and banquets of barley-gruel.

26. Lastly; and it is this conclusion which has induced us to give the title we have done to this essay—

That the theory and practice of medicine ought to be based upon alteration in *power*, or vital *force*, rather than in changes of *structure*.

The principles of treatment are summed up in the following paragraph:—

In the early stage of any disease, when fever is present, the mildest medicines are the best, as the condition is a natural one, essential to the complaint, and having in previously healthy persons a constant tendency to abate after a definite period; under no circumstances should means be adopted to cure this fever which would of themselves suffice to make a healthy man seriously ill. As soon as the intensity of the symptoms subsides, and before the fever itself has gone, the plan of treatment is to be entirely changed. One day may be given to ascertain the condition of the vital power, and the direction it is taking; after that, the physician will encourage the restorative powers of the system with medicinal or hygienic dietetic agents until health is restored.

Special diseases require special plans of treatment, yet the preceding principle is applicable to all.—P. 352.

The same plan of treatment is even more strongly insisted upon in the preface.

It will thus be seen, that Dr Inman agrees with Dr Todd as to the general system on which the treatment of disease is to be conducted; but he differs from him in not recommending the use of very large quantities of stimulants. We confess, however, that, directly in the face of such statements as we have quoted, we were not prepared for such a sentence as the following:—

If there is a tendency to death from deficient vital force principally, he does everything his knowledge teaches him to keep up those vital powers to the "life point." If, on the other hand, there is danger simply from the requisite machinery going wrong, he tries to set it right. In doing this he often appears to violate the principles we have before laid down. He takes blood, gives calomel, antimony, and the like, all of which have a direct tendency to diminish the vital force; but he uses them for a short time only—and if by the use of them he is enabled to restore the normal condition of any organ, the disease of which threatened to cut short life, they become converted into direct conservators.—P. 79.

How Dr Inman can reconcile this passage with the following statement in the preface, we are totally at a loss to imagine:—

Does bleeding lessen the force and frequency of the heart's action? and, if so, is the patient better in consequence? Will not the force and frequency diminish without venesection being practised? Again, if mercury bridles the adhesive inflammation, does it not promote suppurative or destructive? is the latter preferable to the former? Why must adhesive inflammation be bridled at all? Why is this Bucephalus, so much feared as it is, allowed to go on unchecked in one case while it is to be curbed tightly in another? and if mercury be really necessary, how much of it is to be used? Is it necessary for persons to be salivated, and how long must they be so? Cases of antimonial poisoning are now rife: why does the doctor, who would swear a man's life away for administering this drug to his *healthy* wife for the purposes of murder, use this same material in even larger doses when people are ill from pneumonia?

Entertaining such views of the effect of bloodletting, mercury, and antimony, it appears most inconsistent to recommend their use under any circumstances.

The following is the general plan of the work: Dr Inman begins by considering the nature of the vital force, its manifestations, the influence of poisons upon it, its duration, its deficiency. These topics occupy the first six chapters; the remainder of the work is devoted to a consideration of the manifestations of deficient vital power in the different organs of the body, and to the laying down practical conclusions as to the means of preserving and restoring health.

The whole argument of Dr Inman's work may be thus briefly summed up: Disease is a manifestation of a deficiency of the vital force; the object of treatment is to restore the patient to the standard of health; this must be effected by the use of means which support the vital power.

There is nothing essentially new in this mode of viewing the nature and treatment of disease. Every reflecting physician has found out that he cannot treat diseases merely according to their name; and even when the antiphlogistic treatment was at its height, cases were every now and then recognised where exceptional means had to be used,—where, instead of depressing, supporting or even stimulating measures were necessary. Dr Inman has started from a principle which has been generally, and of late increasingly recognised; but he has carried it out to what we cannot but consider an absurd length, so that the explanations he gives by means of it are in reality no explanations at all. Thus, if disease be merely a deficiency of vital power, wherein does one disease differ from another? Is variety of disease merely a question of degree? and in what scale, according to deficiency in vital power, are diseases to be arranged? Dr Inman has not laid nearly sufficient stress upon the fact, that in disease there is not so much a *deficiency* as a *perversion* of vital force; the necessity for maintaining his theory in its simplicity, has compelled him to keep very much out of sight the more important condition of the two. What explanation of the origin of diseases of the lungs is contained in the following passage:—

> If, then, there is evidence that deficient vitality evidences itself in the lungs by an increased secretion or formation of fluid in the air cells and passages, and in diminished circulation through the whole lung, and in accumulation in its most depending parts, are we not justified in considering that the chronic bronchitis of old age or of weakly individuals is essentially non-inflammatory in its cause?
>
> Another alteration to which we must refer is its degeneration into tubercular matter. This is so essentially due to deficient vital force, that no proofs are required to prove the position. The same remarks apply to cancerous or other analogous degenerations, and in a limited degree to the change which occurs in vesicular emphysema.—P. 142.

A more complete begging of the question we never saw. Under what particular circumstances is "deficient vital force" to give rise to tubercle, cancer, or vesicular emphysema respectively?

Throughout the whole work there is a great want of logical precision. Dr Inman frequently takes something for granted, and upon its presumed truth proceeds to establish an imposing chain of arguments and deductions.

The following train of argument may be taken as an illustration of these remarks :—

> 1. In acute rheumatism the amount of fibrine in the blood is unusually large.
> 2. The same is true in almost all cachexies.
> 3. Venesection, salivation, and fasting increase the fibrine in the blood.
> 4. Venesection and mercury in acute rheumatism favour the occurrence of pericarditis and endocarditis.
> 5. The duration of acute rheumatism and the peril of the patient are increased by a debilitating treatment.
> 6. Such an acute inflammation as pericarditis, ending with the rapid formation of lymph, may be compared with diphtheria, where the same thing occurs.
> 7. Diphtheria is a disease of debility, and is best treated with general and local stimuli.
> 8. It is better to leave a diphtheritic patient alone than to reduce his strength. Consequently, if rheumatic pericarditis resemble diphtheria, it is positively a more philosophical plan of treatment to leave it alone, than to treat it by bleeding and mercury, the very means which favour its invasion.—P. 155.

The same mode of reasoning might be made to prove anything. If so and so be true, then such and such a result must follow. But suppose we deny the truth of the assumption, what becomes of the conclusion.

A considerable number of cases is introduced; but they are in general of a very unsatisfactory character, Dr Inman appearing to take for granted, that his readers will receive any of his statements, without requiring evidence of their truth to be laid before them. Of what value are the following observations, as illustrative of the curability of cancer :—

> The case of a Scotch lady has also been reported to me, who was said by many eminent surgeons to have cancer of the tongue, and to whom extirpation had been frequently proposed; the lady firmly declined this, and at last abandoned the hope of cure. As she was a very abstemious woman, some friend suggested the use of whisky toddy as a medicine; the advice was adopted, and the lady was soon perfectly well.

In a note, Dr Inman continues—

> I was called in consultation to see a case, supposed by the medical attendant to be a cancerous affection of the tongue. I doubted greatly whether it was anything more than syphilitic ulceration; and the patient having the benefit of the doubt, was treated by iodide of potassium and tonic medicines, with generous diet. The tongue was well in a fortnight.—P. 280.

Again Dr Inman states, that by adopting the supporting treatment, he has reduced the mortality of acute hydrocephalus (tubercular meningitis) to 10 per cent.! This startling statement is supported by the evidence of a few cases, of which the following may be taken as a specimen :—

> In another family, where the mother died of phthisis, one child, æt. 7, died after a few days' illness; and both the others, now æt. 5 and 9, were affected slightly when about two or three years old. Attention, however, having been aroused to the first symptoms, they were speedily cured.

The reason of much of this deficiency of logical precision lies, we have no doubt, in Dr Inman's assured conviction of the correctness of his own system. His mind is already made up, and he appears to take for granted that his readers will be satisfied with evidence and argumentation which we are sure would not satisfy his own mind on any doubtful subject. We willingly admit that there is much curious and interesting matter in the volume; but Dr Inman's great fault has been an endeavour to simplify too much. The theory and treatment of disease will never be reduced to a single formula; and the labour devoted to the search after any such formula can only be misapplied. If Dr Inman devote himself to the investigation of special subjects, we have no doubt he will do good, for he is evidently a man who is capable of observing and thinking for himself.

There is only one other point to which we can refer, but it is one which has astonished us not a little. Dr Inman is showing that various diseases are characterized by a great increase in the amount of fibrine in the blood, and by a corresponding diminution in the amount of the red globules. He says,—

> "In pulmonary consumption the red parts are diminished 50 per cent., and the fibrine is augmented 580 per cent.; and in one case it was noted, that after the patient had taken cod-liver oil, the excess was *diminished* until the amount of fibrine was only 250 per cent. above the average.
>
> "In cancer there is a similar phenomenon, the average excess of fibrine in that disease being 600 per cent. In one case of leucocythemia, in an old man who had been treated by calomel, the excess of fibrine was 1100 per cent.
>
> "In sea-scurvy a similar change is seen: the red globules are diminished about 50 per cent., and the fibrine increased at the rate of 250 per cent.; and we may say generally, that in other diseases implying great debility or want of vital power, a similar change is found."

We could scarcely believe our eyes on reading this sentence. An excess of 1100 per cent. in a case of leucocythemia! That is to say, taking the normal quantity of fibrine as 2·5 parts per 1000, there were in this case actually 30 parts in 1000. Anything approaching to this we had never heard of. On turning to the appendix, we found the following reference to the case alluded to: "In a case of leucocythemia in an old man (reported in Bennett's book), treated with calomel, the fibrine was found to be 1100 per cent. in excess." We consulted Dr Bennett's book, and found the case referred to. It is one reported by Bessière, who had analysed, not the blood, but "a jelly-like clot of a white colour," found in the heart and great vessels! And in this clot there were 22·1 parts of fibrine in 1000. Either Dr Inman is not aware that the amount of fibrine in a colourless clot is no criterion of the amount of fibrine in the whole blood, or he has showed a culpable carelessness in not informing his readers of the real condition of matters; and there is the less excuse, as Dr Bennett's book contains a table of analyses of blood made during life, and in no case did the amount of fibrine exceed 7 parts in 1000. The quantity of fibrine contained in the blood in cases of pulmonary consumption, cancer, and other diseases, is also greatly exaggerated.

The Dublin Cow-Pock Institution, and its Charge for Vaccine Lymph; viewed in Relation to Vaccination, and the Prevalence of Small Pox in England and Ireland. By P. W. LONG, M.D. Dublin: Kelly, 1860. Pp. 24.

Small-Pox and Vaccination, Historically and Medically Considered, etc. By ALFRED COLLINSON, M.D. London: Hatchard and Co. 1860. Pp. 85.

IT appears that 38,275 persons died of small-pox in Ireland during the ten years ending with 1850; and of these no fewer than 34,377 were children under ten years of age. A large mortality this; and, in proportion to the population of the country, equal to nearly three times that which took place in England and Wales during the same period.

"Therefore," argues Dr Long, "it is manifest that vaccination is sadly mismanaged in Ireland."

We rather think that the peculiar social condition of Ireland, as compared with England, accounts sufficiently for the greater mortality there. Our medical brethren in the sister island have, doubtless, been exerting themselves, to the best of their ability, against the inroads of small-pox. But it is probably a much more difficult task to vaccinate the masses in Ireland than in Great Britain, and hence mainly the greater mortality from small-pox among them.

Dr Long, however, asserts with some heat, that the blame rests very much with the Dublin Cow-Pock Institution. This Establishment, it seems, receives a grant from Government of L.400 annually; and Dr Long is scandalized by what he deems its unparalleled effrontery, in selling vaccine lymph to medical practitioners, at the rate of two shillings and sixpence per packet, instead of distributing it gratuitously (as, in his opinion, it is bound to do) to all applicants.

This charge of two shillings and sixpence is, in Dr Long's estimation, the grand obstruction to efficient vaccination in Ireland. Abolish the Dublin Cow-Pock Institution, therefore, he says (not very logically it must be admitted), and set up another in its room, on the model of the National Vaccine Establishment of London, and let vaccine lymph be supplied free of expense to all medical practitioners in Ireland who may apply for it, and the annual mortality from small-pox will be greatly diminished.

Now, while we admit at once, that it is unreasonable in the managers of an institution receiving L.400 a-year of the public money, and vaccinating annually, say 3000 infants (the number last year was 3194), to sell lymph at the high rate of half-a-crown, for as much as is sufficient to vaccinate one patient, we are strongly of opinion that Dr Long greatly exaggerates the importance of having a central depôt in Dublin, from which all medical men in Ireland may obtain supplies of lymph without cost. For, besides that the members of the medical profession everywhere have ever been, and ever will be, more beholden to one another than to central vaccine institutions for supplies of this invaluable substance, we confess to disliking the principle upon which the National Vaccine Establishment has always proceeded, of distributing lymph to all quarters gratuitously and on demand. We would much prefer seeing that Establishment furnishing lymph at a nominal charge, as is done in Edinburgh, where the Royal Public Dispensary and the New Town Dispensary (neither of which institutions, it may be observed, have any Government allowance) charge exactly one-fifth of the price exacted by the State-paid Establishment in Dublin. The effect of a small nominal charge is to discourage remissness on the part of private practitioners who, by an effort, might help themselves. To issue a general invitation to all the world to come and get vaccine lymph, without price, is, in our humble opinion, to assume responsibilities which no institution, however gigantic the scale on which it is conducted, can possibly meet. For what security is there that the supply, necessarily limited, will always be adequate to meet an illimitable demand? The resources of the National Establishment were, it is well known, last year insufficient to meet the run to which it was subjected during the then extraordinary prevalence of small-pox. We are told in the report presented to the Privy Council in March last, that it was only by unusual exertions "on the part of all the officers of the Establishment, that the Board was able, after a temporary difficulty, to find the means of supplying the requisite quantity of lymph."[1]

The question, however, naturally occurs, and is unanswered, Was the *quality* of that lymph equal to what it would have been had it been less in *quantity?* Dr Long complains bitterly, that the Dublin Cow-Pock Institution distributed to its subscribers last year only 19,000 charged points, whereas 46,000 points is the number which, he says, it ought to have furnished had it been doing its duty proportionally as well as the National Vaccine Establishment. We protest we do not think the less of the Dublin Institution for having issued only 19,000 charges instead of 46,000. We have an idea that the National Vaccine Establishment issues too much lymph, and that the sooner the quantity is reduced to a small fraction of its present amount, the better for the Establishment itself, and the better for the country. Such a reduction would indicate, that the perpetual and universal scarcity of lymph, which Dr Husband, in his excellent pamphlet, has conclusively shown to be the main cause of the great mortality from small-pox in this and other countries, is beginning at length to be succeeded by universal plenty. We would recommend Dr Long to acquaint himself with

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[1] Report of the National Vaccine Board, March 1860.

Dr Husband's method of preserving lymph fluid and active in capillary tubes; and we venture to assure him, that in proportion as that method gets more and more into use, in the same proportion will Vaccine Institutions become less and less necessary as centres of supply of lymph, it being much easier, and costing much less time and trouble, and expense withal, for any medical practitioner to keep himself unfailingly in vaccine matter by means of this method, than to do so by the aid of Cow-Pock Establishments, bound to supply him on demand.

Dr Collinson's pamphlet is a good sketch of the history of small-pox and vaccination. Viewed practically, however, it may be regarded rather as cheering on those who are labouring in the cause of public vaccination, than as suggesting any thing really new or useful.

His conclusions are, in effect: Conduct vaccination properly, and you will not extirpate small-pox, but will reduce its ravages to a minimum; let care be taken to have properly qualified vaccinators and lymph of perfect quality, and great central depôts issuing reliable lymph; and let there be universal vaccination. Platitudes these. Dr Collinson, like Dr Long, attaches too much importance to the setting up of great centres of supply, and too little to what he terms "the careful husbanding of perfect lymph," of the utility of which process he is as yet sceptical.

Ophthalmic Hospital Reports, and Journal of the Royal London Ophthalmic Hospital.

When the first number of these Reports appeared, about three years ago, we expressed a favourable opinion in regard to it, and confidently anticipated a successful future; believing that, in a field for observation and practice so very ample as that presented by the Royal London Ophthalmic Hospital, any other result was hardly conceivable, and that the editor's principal difficulty would be the *embarras des richesses.* We plead guilty to an oversight in not inviting the attention of our readers to the work as it proceeded; but we are perhaps better qualified by the delay, now that the eleventh number has appeared, to form a reasonable estimate of the manner and degree in which our anticipations have been realized. We desire to do this candidly, and with an honest endeavour to suggest something which may help our friends in the south to make their Reports still more worthy of the great institution which they represent, and still more useful in promoting ophthalmic science, and creating an interest in it throughout the ranks of the profession. Our remarks, which are friendly and intended to do good, are made from the standpoint—to use a modern phrase—of well-instructed and earnest, but at the same time practical and utilitarian, members of the profession, who wish to be informed of every important fact in pathology that may be established, and every real improvement in practice, but have neither taste nor time for statements and discussions which have no manifest bearing upon the cure and alleviation of disease. Before going farther, we may here assure the reader, once for all, that these Reports already contain many important communications which, in our opinion, hardly admit of amendment either in substance or in style.

Our first remark is, that the tendency which manifestly exists to enlarge the dimensions of the work should be firmly resisted; and that all concerned should be impressed as much as possible with the extreme value and importance of an accurate and concise style of composition in the handling of scientific subjects. It appears to us that every word intended for the eye of educated men, such as the readers of these Reports are supposed to be, ought to bear strictly upon the topic under discussion, and be essential to its elucidation. But how often, judging merely from the work under review, is this obvious and commonplace rule disregarded! How often is the narrative of cases burthened with unimportant, trivial details, and the essential, the real points overlaid and almost hidden by a mass of irrelevant ideas as well as words! Some writers, we admit, are much more tempted than others to fall into this mistake, possibly from an original defect in their logical faculty; but, even in their case, much may be done to avoid it by more care and self-criticism, or by submitting their compositions to the experienced eye of a literary friend. They need not be ashamed to have recourse to this last device, because we know, on excellent authority, that the late Dr John Abercrombie, a clear and accurate thinker, invariably employed in this way some one in whose judgment and taste he could repose confidence, before venturing into print. We add, but with diffidence, that this will be all the more necessary if the editor himself, the natural guardian of the work, should not be entirely free from similar infirmities. *Quandoque bonus dormitat Homerus.*

We could point out not a few papers in these Reports which, in a literary point of view, are open to very severe criticism, but which at the same time are *apparently* filled with valuable and interesting information. The word *apparently* is used advisedly; because, in sober earnest, the writer's meaning is often so helplessly obscured by his composition, that we cannot be quite sure of having found it; and the illogical mixing up of topics is sometimes so inexplicable and startling, that we require to read again and again, and to study whole paragraphs, before even approaching a satisfactory interpretation. Now, although the result may in a few instances reward us for our pains, we maintain that no writer is excusable who involves his reader in so much unnecessary trouble by a careless and slovenly composition. We are confident that very few readers indeed will undergo the toil of wading through long, rambling memoirs, when on former occasions they have encountered similar difficulties thrown in their way by the same writer, without an adequate reward. And besides this unfortunate result of a slipshod style as regards the writer himself, the reader is put out of humour, and is very apt to throw aside the entire publication in disgust, and so to neglect other portions of it which really deserve commendation. And what, we ask, will foreign readers be able to make of writings which are interpreted so painfully by ourselves? Let us fancy our own dismay and discouragement were we informed that a German author, who had written on a subject in which we were specially interested, was so obscure, both from a want of arrangement in his ideas and a habitual inaccuracy of language, that even his countrymen were often at a loss to understand his meaning. To translate willingly the works of such an author into our mother tongue, would surely imply that we possessed both the enthusiasm and the indomitable perseverance of the German himself.

We would suggest, therefore, the importance of narrowing rather than of expanding the original dimensions of the *Journal;* and, as closely connected with that, the desirableness of greater attention being paid, by all concerned, to the literary merits of its component parts.

As our first remark has referred to the substance of the work itself, our second shall apply to one or two features in the plan upon which it is conducted.

We would call attention to the fourth notice addressed to contributors. It is a specimen of that carelessness in the use of language upon which we have been animadverting; and, being evidently important, it really needs to be explained. We quote it entire:—"4th. Papers and cases must be original, that is to say, not before made public in any way. Papers must not be addressed to those who have never before been interested in the subject; but all that concerns the eye, in health or disease, may be appropriated for the *Journal.* Cases (published cases) must be novel or of rare occurrence; but a single new fact or rare event in the history of any case is, however small in its bearing, of large importance." The first sentence contains an announcement which is at variance with, and indeed contradicted by, another in the third. We are told that papers and cases must be original, that is to say, not before made public in any way. We are subsequently told that "published cases" must be novel, or of rare occurrence. Were the word *published* left out, we could understand what was meant; but, as the intimations stand, they are inconsistent with each other. Allowing that to pass, however, we see no advantage, but the reverse, in excluding from a purely ophthalmic Journal important and interesting cases which may have been previously published in other works. It would add greatly to the permanent value of this publication were it known to be the avowed repository of all such cases.

The second sentence goes on to intimate that papers must not be addressed to those who have never before been interested in the subject. What this could mean, we puzzled ourselves for a long time to conjecture. We now regard it as a strong hint to all intending contributors, that their productions must on no account contain any elementary matter, or be so clear and simple as to admit of being understood by any other readers than the initiated, that is to say, professed ophthalmologists. Taking this interpretation as the correct one, we doubt the wisdom of imposing any such restriction upon the common sense, discretion, and natural liberty of authorship; but we are enabled by it to account for and pardon some of those obscurities of thought and style which we have already condemned as blemishes.

In Number Ten, under this same notice to contributors, we read, "All that concerns the eye in health or disease may be appropriate for the *Journal.*" This is intelligible, and, in our opinion, quite as it should be; but, in Number Eleven, the word *appropriate* is altered into *appropriated*—a totally different intimation, and altogether inconsistent with the opening announcement, that "papers and cases must be original, that is to say, not before made public in any way."

The concluding clause, as it stands, seems to have more sound than sense, although we may guess at the author's meaning:—"A single new fact or rare event in the history of any case is, however small in its bearing, of large importance." We almost feel that such criticism is trifling; but our only object in having recourse to it is to point to the necessity of greater care and accuracy in the editorial department of a work which cannot fail, in spite of imperfections and blemishes, to be both eminently useful and interesting. We again cordially acknowledge that it has in many respects achieved that character; and we advise all our readers who take an interest in ophthalmic science, to encourage and strengthen the undertaking by adding their names to the list of subscribers. The price is only six shillings per annum. The work appears quarterly, and is profusely illustrated by diagrams and coloured drawings.

Part Third.

PERISCOPE.

MEDICINE.

HYPOCHONDRIACAL INSANITY AS A PRECURSOR OF GENERAL PARALYSIS. BY M. BAILLARGER, OF THE SALPETRIERE, PARIS.

General paralysis is a common and most serious phase of mental disease. It attacks patients of all ages, and its progress towards a fatal termination exhibits stages of the most melancholy and humiliating nature. All medical men accord it as being most insidious in its approach. It may be long in becoming fully developed, presenting at first only the most trivial indications, in many cases so trifling as to pass altogether unobserved; and when the malady does at last attract attention, it may be too late for arresting its advance. It is therefore most important to attend to this disease at the very first; and it is with this object that it seems useful to describe the intimate relation existing between the hypochondriacal form of melancholia and general paralysis.

This relation being understood, it becomes one means of detecting the advent of that disease at the very commencement of its attack. It is of importance to distinguish this symptom, as the melancholy accompanying general paralysis very much resembles melancholia in its simple form. The conceptions or illusions of the hypochondriac, however, although of considerable variety, are yet of such a tendency as often to present something of a special character in their nature. The patients believe that their various organs are changed, destroyed, or completely obstructed: they pretend, for example, to have no mouth, no abdomen, no blood—that their gullet is stopped up, their stomach quite full, their bowels shut up; they imagine that their food passes from its ordinary channels—that it gets into their skin, or even their clothes. Four patients believed their body to have become putrid. Many among such are afflicted with hallucinations of smells. Some keep their eyes closed, and allege they are blind; others cease to speak, and state afterwards that it was impossible for them to open their mouth; they assert that they cannot swallow, nor defecate, nor make water; they affirm that their members are altered—that they are larger or smaller; they say they do not exist, or even go so far as to believe themselves dead; they remain motionless, the eyes shut, and when their limbs are lifted they let them fall, as if completely paralysed. These different delusions lead to serious consequences: many of the patients refuse, more or less obstinately, to take food, and sometimes it becomes necessary to feed them by means of the stomach pump; and such patients speedily become much emaciated. I have seen, says M. Baillarger, a lunatic die in eight days from obstinately resisting the employment of the stomach pump, under the impression that his stomach was completely full, and his gullet obstructed. One patient pretended he could not make water, and used every effort to retain it; his bladder became enormously distended, and he was at last attacked by a veritable retention, and it was with great difficulty the catheter could be used. In the end a false passage was made, and the patient died, while yet in the first period of the disease.

The tendency to gangrene, which is one of the characteristics of general paralysis in its latter stages, exists in these cases markedly, and before its usual period. Four cases had large eschars over the sacrum, without ever having been confined to bed; one woman, who for a year had exhibited all the symptoms of commencing general paralysis, preserved every appearance of health otherwise, when, all of a sudden, she became affected with hypochondriacal melancholia, and six weeks afterwards died of gangrene in both feet.

Hypochondriacal delirium is thus not only a mere premonitory symptom of certain forms of paralysis, but it is a serious symptom, and one very unfavourable, in prognosis.

In reference to this affection—viz., that of hypochondriacal insanity—viewed as one of the precursors of general paralysis, this being the fact of most practical value in connection with it, the delusions of which we have spoken seem to claim especial attention, as they are sometimes to be detected in patients as yet evincing no indication of paralysis,—this supervening at a later period. Such a termination is certainly not invariable; but it is so common after this symptom, and the prognosis in such cases is so unfavourable, that considerable importance seems to attach to the subject. Thus Dr Combes published some remarks on a case of "Lypémanie," with stupor, and other serious symptoms, —nothing, however, indicating that at a later period this patient should be attacked with paralysis; and, after fifteen months' residence in this asylum, where he was treated, he was dismissed as cured. In reading Dr Combes' remarks, I was struck, observes M. Baillanger, with certain of the delusions affecting this patient. He had believed that he was about to die, if indeed not already dead; that his limbs were atrophied, that he had none, etc. These appearing to be good grounds for suspicion, I wrote Dr Combes to know what had become of the patient. The answer confirmed my suspicions to be correct,—the result having been that, after a year's return to his occupations, he had been attacked with general paralysis. We may see by this example, that, had hypochondriacal delirium been held as a certain precursor of general paralysis, this affection might have been foretold two years before it actually took place.

It may appear strange that one form of insanity should thus be urged as premonitory of paralysis. Singular as it may seem, however, it is not the first time that such a doctrine has been urged. Since the writings of Bayle, no medical man doubts the fact of certain forms of insanity, such as the ambitious form, being symptomatic of approaching paralysis. And if one form of delirium be held, in mania or monomania, as indicating the advent of paralysis, there seems no reason why this particular hypochondriacal form should not serve the same purpose, and with equal certainty, in melancholia.

We do not attempt explaining these facts; and, we may add, it seems useless to do so, either here or in the case of ambitious insanity. One point connected with the ambitious form may be mentioned; and that is, the relative frequency of general paralysis among females in different ranks of society. While this malady is equally common among males of all classes, among women it is not so. It is very common among the poor, and very rare among the rich. It would appear, however, that this circumstance has been forgotten by those who would explain the greater number of cases of ambitious insanity as induced by ideas of speculation—by the desire of suddenly arriving at honours and fortune.

In conclusion, it appears evident that hypochondriacal no less than ambitious insanity may, in different circumstances, be considered as a prognostic of general paralysis. The intention of the present paper has accordingly been to direct attention more particularly to the latter of these forms. As for the first, I have frequently had occasion, before now, to refer to it in all its remarkable psychological characters.—*Gazette des Hôpitaux*, Sept. 1860.

PERVERSION OF THE MENTAL AND BODILY FACULTIES AS PREMONITORY SYMPTOMS OF GENERAL PARALYSIS. BY M. BRIERRE DE BOISMONT.

This paper, read at the meeting of the "*Académie des Sciences*," Sept. 24, 1860, may be considered as a sequel to that of M. Baillarger, read at its previous meeting, and just noticed. After alluding to the medico-legal aspects of such cases as are characterized by a tendency to theft and other criminal propensities, the author states that his observations have been carefully collected from a hundred examples falling under his own care, and respecting which he had already communicated to the *Société Médico-psychologique* those alterations in character and disposition throwing light upon the question under discussion.

According to his observation, the most frequent symptoms—in fact, what occur in three-fourths of such cases—are, great irritability, movements of impatience, anger, and violence. In a much smaller proportion of cases, the disease assumes, on the other hand, characters of indolence, and apathy, and gentleness. Such patients are reasonable and well-conducted; but between their words and actions there is an insurmountable discrepancy observable.

In place of either of these states of mind, or along with either of them, we frequently find perversion of the moral faculties: individuals who until then had been of unimpeachable character, suddenly becoming irreligious, immoral, or dishonest. These indications are important to be observed, as they are often unsuspected by any one as being connected with the diseased condition existing. The propensity to steal is perhaps, of all others, the commonest among this class of symptoms, and seems to some extent connected with that peculiar flow of spirits common in such patients, and evinced in their delusion that they are rich, powerful, and lords of all that they see—a state of mind which, in its results, sometimes entails the most painful consequences.

It is thus certain that the greatest change in the character and conduct is often observed in connection with general paralysis, giving rise to acts of an eccentric or reprehensible nature. Such acts are, no doubt, frequently to be met with as ordinary manifestations of the disposition, but their sudden and unaccountable accession results from mental disease, and is especially connected with general paralysis: they are its premonitory symptoms—*avant-courriers*, as they have been styled by Dr Forbes Winslow, in his work "On Obscure Diseases of the Mind and Brain."

Our principal reliance in the diagnosis of such cases must rest on the general bearings of the disease. In the greatest number of instances where sudden alteration in character, disposition, and conduct become apparent, there is reason to fear the accession of general paralysis; if the age is from 35 to 45 years, and excess of some kind, such as sexual or intellectual excess, and hereditary predisposition can be added, the prognosis becomes all the more certain.

Besides these characteristic symptoms, we must not lose sight of a very common occurrence connected with them,—that is, the frequency of attacks of the nature of cerebral congestion. This may occur in the shape of a transient stunning sensation or giddiness, and pass off without attracting much notice; but it does so more commonly, and is of serious importance. Such congestions entail weakening of the intellectual faculties, loss of memory, and absence of mind. The mind loses its precision, its ordinary power. If the patient resume his occupation, and take to any work requiring application, the difference is at once observable in his capability of conducting it. His benevolence is greater than usual; there is a confidence betraying itself in his speech, which foretells the advent of insanity in its ambitious form. On the other hand, but less frequently, there is a state of dejection, the tendency to melancholia and hypochondriasis.

But the disorders of the muscular system are the key or touchstone for our guidance in this disease. One of these is of much importance, and manifests itself in a passing, transient trembling of the lips; a scarcely perceptible embarrassment in speech; a hesitation in pronouncing a certain word or letter, which sometimes does not occur except at long intervals. Taken by itself, this symptom may not be determinative, although it is of great assistance; but if it be added to diminution of motive power, such as may be observed in asking the patient to grasp one's hand, or his own limb, the certitude becomes increased tenfold. To these symptoms may be added, inequality of the pupils, exaltation or failure of the sexual functions, diminution of the cutaneous sensibility, tremors of the muscles, and the results of analysis of the urine, and the indications afforded by means of electricity. We have also, in many cases, adds the author, observed paralysis of the sixth pair, amaurosis, and attacks of deafness, precede by several years the occurrence of general paralysis, and serve as the means for its prognosis.—*Gazette des Hôpitaux*, Oct. 1860.

SURGERY.

EXTIRPATION BY LIGATURE OF AN EXTENSIVE TUMOUR INVOLVING THE RECTUM.

BY M. MAISONNEUVE.

On the 20th of July there was dismissed from the Hospital of La Pitié, at Paris, a patient on whom had been performed, on the 14th of May, extirpation of the inferior extremity of the rectum for a cancerous tumour. This case was one of much interest, not only on account of the complete success of the operation, but on account of the ingenious and simple mode of its performance. When we recollect how much dexterity, patience, and boldness is required for extirpating the rectum according to Lisfranc's method, it seems indeed most important to have reduced such an operation to one of the greatest simplicity, at the same time rendering it almost entirely exempt from any danger of hæmorrhage or purulent infection, so commonly accompanying it. Such success is not the first of the kind obtained by M. Maisonneuve, as, in his remarkable memoir on "La Ligature Extemporanée," he has related four similar examples.

R——, aged 60, was admitted to the Hospital of La Pitié, April 25th, 1860, to be treated for a carcinomatous tumour of the inferior extremity of the rectum. The patient stated that about three years previously he had noticed, for the first time, a hardness at the back part of the anus, and that he had entered the Hospital St Antoine, where the diseased part was removed. At a later period, the tumour having reappeared, he was again operated on at the same hospital, this operation being likewise followed by a return of the disease.

On presenting himself at the wards of M. Maisonneuve, the tumour was nearly as large as the fist, hard and nodulated, occupying nearly two-thirds of the circumference of the rectum, within which it ascended for about two centimetres; no ulceration of its surface existed, but it was the seat of lancinating pains.

Under these circumstances M. Maisonneuve proposed the operation, which was agreed to; and on the 4th of May it was performed, in the following manner. The patient being laid on the right side, the right thigh extended, the left bent as much as possible, the tumour was surrounded by an incision across its whole circumference, not cutting more deeply than the thickness of the skin. At the bottom of this groove seven ligatures were introduced, at two centimetres distance from each other, of which one of their ends hung from the anus. Each one of these ligatures was then employed to pass a loop of strong packthread; the tumour was thus included by a series of loops, which, the ends being united, constituted as many constrictors (*constricteurs*). It was thus easy, by tightening these ligatures, to divide the soft parts of the tumour embraced by them; this division was effected without any hæmorrhage, and the extensive wound left was dressed with charpie. The inflammatory reaction after this operation was most moderate, scarcely if at all amounting to fever; suppuration was soon established, the wound was covered by healthy granulation, and cicatrization speedily commenced.

In consequence of the loss of substance suffered, the patient was during some weeks affected with incontinence of the fæces; but the tissues being soon contracted by the cicatrix, this infirmity entirely disappeared, so that on the 23d July, when the man was dismissed, the cure was quite complete, and continued so on his visiting the hospital in August.—*Gazette des Hôpitaux*, Sept. 1860.

ANATOMY.

ON THE ARRANGEMENT OF THE MUSCULAR FIBRES OF THE VENTRICULAR PORTION OF THE HEART OF THE MAMMAL. BY JAMES PETTIGREW, ESQ.

In the following abstract, published in the Proceedings of the Royal Society, of the Croonian Lecture for 1859, Mr Pettigrew has given a sketch of his original and important views on the muscular structure of the heart, based upon an extensive series of elaborate dissections which he performed at the University of Edinburgh, in competition for a prize offered by Professor Goodsir. They form a contribution of great value to the anatomy and physiology of the subject:—

The Lecturer began by referring to the descriptions of the arrangement of the ventricular fibres of the heart given by previous inquirers, more especially Lower, Senac, Wolff, Gerdy, Duncan, and Reid. He then proceeded to give an account of the results of his own investigations, which had been conducted on the hearts of the sheep, calf, deer, ox, horse, etc.; all of which, he observed, bear a perfect resemblance to the human heart.[1] In order, as much as possible, to overcome the difficulties of the subject, he availed himself of drawings, explanatory diagrams, and models illustrating the course and relation of the fibres. To these last, however, he observed, he attached no special importance, further than that they were useful vehicles of communication; and it was to the dissections themselves, some of which were before the Society, that he looked for a corroboration of the statements he advanced.

Commencing with the left ventricle, which he believes to be the typical one, the Lecturer stated that, by exercising a little care, he had been enabled to unwind, as it were, its muscular substance, and so to separate its walls into several layers,[2] each of which is characterized by a difference in direction. Seven layers, at least, can be readily shown by dissection; but he believes they are in reality nine, viz., four external, the fifth or central, and four internal. He explained how the external fibres are continuous with the internal fibres at the apex, as was known to Lower,[3] Gerdy,[4] and others; and how the fibres constituting the several external layers are continuous with corresponding internal layers likewise at the base,[5]—a fact to which the Lecturer drew particular attention, as being contrary to the generally received opinion, which is to the effect that the fibres at the base are non-continuous, and arise from the auriculo-ventricular tendinous rings, which, as he showed by numerous dissections, is not the case.

Coming next to the question of the direction of the fibres, he showed how there is a gradational sequence in the direction of the fibres constituting the several layers. Thus the fibres of the first layer are more vertical in direction than those of the second, the second than those of the third, the third than those of the fourth, and the fourth than those of the fifth, the fibres constituting which layer are transverse, and run at nearly right angles to those of the first layer. Passing the fifth layer, which occupies the centre of the ventricular wall and forms the boundary between the external and internal layers, the order of things is reversed; and the remaining layers, viz., six, seven, eight, and nine, gradually return to the vertical in an opposite direction, and in an inverse order. This remarkable change in the direction of the external and internal fibres, which had in part been figured by Senac, and imperfectly described by Reid,[1] as well as other detached and important facts ascertained by himself and others—such as the continuity of the fibres at the apex and base, already adverted to—he suggested might be accounted for by the law of the double conical spiral, which he proceeded forthwith to explain.

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[1] Mr Pettigrew's researches include also the arrangement of the fibres in the ventricles of the bird, reptile, and fish.

[2] Senac (*Traité de la Structure du Cœur, etc.* [Paris, 1749], planche 8) figures four layers; and Searle (*Cyc. of Anat. and Phys.*, art. "Heart") speaks of three.

[3] *Tractatus de Corde, etc.* London, 1669.

[4] *Recherches, Discussions et Propositions d'Anatomie, Physiologie, etc.* Paris, 1823.

[5] The late Dr Duncan, jun., of Edinburgh, was aware of the fibres forming loops at the base, but seems to have had no knowledge of the continuity being occasioned by the union of corresponding *external* and *internal* layers, or that these basal loops were prolongations of like loops formed by similar corresponding external and internal layers at the apex—a point which the Lecturer believes he is the first to establish.

The expression of the law, as he conceives it, with reference to the arrangement of the fibres in the ventricle, is briefly the following:—By a simple process of *in*volution and *e*volution, the external fibres become *internal* at the apex, and *external* again at the base; so that, whether the fibres be traced from without inwards, or from within outwards, they always return to points not wide apart from those from whence they started. In order to illustrate the principle of the double conical spiral in the above sense, he took a sheet of net, through which parallel threads of coloured wool, representing the individual fibres, were drawn at intervals; and laying it out on the table before him, with the threads placed horizontally, seized it by the right-hand off corner, and rolled it in upon itself (*i.e.*, towards his own body) seven turns, so as to produce a cone whose walls consisted of nine layers.[2] On gradually unwinding the walls of the cone thus fashioned (which is tantamount to undoing the spirals), so as to imitate the removal of consecutive layers from the walls of the ventricle, he finds that the gradation in the direction of the several layers just specified is distinctly marked; and that these layers, as was exhibited in various dissections, find a counterpart in the ventricle itself. Thus (the heart being supposed to be placed upright on its apex), in the first external layer the threads are seen running from base to apex, and from left to right,[3] almost vertically; in the second layer they are slightly oblique; this obliquity increases in the third, and still more in the succeeding layer, till in the fifth, or central one, the direction of the threads becomes transverse. After passing the central layer, the direction of the threads (as of the fibres) is reversed; in the sixth layer they begin to turn from *right* to *left*, with a slight inclination *upwards;* and in succeeding layers gradually become more and more vertical, until the innermost, or ninth, is reached, in which they become as vertical as in the first, but are curved in an opposite direction.

As a necessary consequence of this arrangement of the fibres, the Lecturer showed, that when the layers are in apposition, as they exist in the undissected ventricle, the first external layer and the last internal cross each other with a slight deviation from the vertical, as in the letter X; while in the succeeding external and internal layers, until the fifth or central one, which is transverse, is reached, they cross at successively wider vertical angles, as may be represented by an ⋈ placed horizontally.

Holding the cone, prepared as described, against the light, the Lecturer then showed how, by the rolling process, a double system of conical spirals, similar to those found in the left ventricle, had been produced,—the one an external left-handed down system, running from base to apex, and corresponding with the external layers; the other an internal right-handed up system, running from apex to base, and corresponding with the internal fibres; and how, seeing the opposite systems are the result of different portions of the same threads being rolled in different directions (the one within the other), the spirals are consequently continuous at the apex.

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[1] *Cyc. of Anat. and Phys.*, art. "Heart." London, 1839.

[2] A sheet of paper with parallel lines drawn upon it will answer the purpose equally well, except that its non-transparency precludes our seeing the external and internal spirals rolled the one within the other when the sheet is fashioned into a cone and held against the light, as the Lecturer recommends. The sheets should be twice as long as they are broad; and the lines or threads should run in the direction of the length.

[3] That is, in the direction from the left hand to the right of the observer.

He in this manner explained the continuity of the external and internal fibres at the apex. By simply producing the threads forming the internal spirals, and turning them out at the base until they met corresponding external spirals, he next showed how the continuity of the fibres at the base might be accounted for. The connection of the fibres at the base, he remarked, is effected for the most part as at the apex, by continuity of their proper muscular substance; but those of the papillary muscles are continued by the tendinous cords. This continuity observes a certain order, so that certain external layers are continued at the apex into certain internal layers, and turn outwards at the base into their original external position. Thus the first layer is continuous with the ninth, the second with the eighth, the third with the seventh, and the fourth with the sixth; while the fifth occupies, as already said, the middle place between the four external and four internal. He thus endeavoured to prove that a strong analogy exists between the arrangement of the fibres at the apex and the base; and that the same principle which turns in the external fibres at the apex also turns out the internal at the base,—a view which, while it extends rather than militates against that of older writers, was strongly supported by the arguments he adduced. It would therefore seem that the fibres do not form simple loops pointing towards the apex, as generally supposed, but twisted continuous loops pointing alike to apex and base. From this arrangement it follows that the first and ninth layers embrace in their convolutions those immediately beneath them, while these in turn embrace those next in succession, and so on until the central layer is reached,—an arrangement which may in part explain alike the rolling movements and powerful action of the ventricles.

The Lecturer next drew attention to the manner in which the external fibres pass into the interior of the ventricle to form the musculi papillares. He first remarked that, when the external fibres get into the interior, they are necessarily confined to a smaller area, and are therefore crowded into a mass of greater thickness, which contributes to form the papillary muscles. He then showed that the external fibres, entering at the apex and forming the "vortex," pass inwards in two principal parcels or bundles, one of which comes chiefly from the posterior surface of the ventricle, and winds forwards to enter the apex anteriorly; whilst another comes from the anterior surface, and winds backwards to enter the apex posteriorly,—a fact which the Lecturer believes has been hitherto overlooked. On entering the cavity, the anterior bundle crosses to the posterior wall, and forms the posterior papillary muscle, whilst the posterior bundle forms the anterior papillary muscle. The fact of this double entrance, and its relation to the papillary muscles, was shown in various preparations; and it was remarked that, but for this double entrance, which applies to all the external layers, the apex of the ventricle would be like the barrel of a pen cut slantingly, or, in fact, lop-sided; whereas, by the arrangement described, it is rendered bilaterally symmetrical.

To bring this bilateral entrance and symmetry into harmony with the description already given of the succession of layers, and with the illustration of the conically rolled sheet, the Lecturer explained that we must regard the primary sheet as having split into two; or we must suppose a second one superadded, and rolled up along with the first. In fact, if a second sheet of net with parallel threads be laid on the first, so that the threads upon it intersect those of the first at an acute angle, and the two are then rolled up together in the way already described, the result will be that the opening at the apex will have two symmetrical lips, as it were, representing the two parcels of fibres forming the vortex in the natural heart.

It is well known that the wall of the left ventricle is thickest at about a third of its length from the base, and that from this point it decreases in thickness towards the base, and still more towards the apex, which is its thinnest part. This condition may be explained by a certain modification of the preceding description,—by supposing, namely (what is really the fact), that the outermost and innermost layers extend further towards the apex and towards the base than those which come next, and these again further than those which succeed, and so on with the rest; the central one being of least extent, and confined indeed to about the middle third of the ventricle. In this way the ventricular wall is thickest towards its middle, where it is composed of all the layers; but becomes thinner and thinner towards the base and apex, where it consists of fewer and fewer layers.

Proceeding next to speak of the right ventricle, and especially of its relation to the left, the Lecturer observed that the simplest way to view that ventricle is to regard it as a segment of the left one; and this view he considers to be most in accordance with what we know of its structure and mode of development. For a short time after the heart appears in the embryo, its ventricular compartment is simple; but a septum soon begins to rise up within it, which proceeds from the right side of the apex and anterior wall of the cavity in the direction of the base, and is completed about the eighth week of intra-uterine life. For a time, moreover, the new-formed ventricles have equally thick walls; but as the full period is approached, the left, which is destined after birth to perform a larger amount of work, comes to predominate in thickness. Starting now from the left, or "typical" ventricle, constituted as above described, the Lecturer showed that, by pushing in the anterior wall in imitation of the constructive process in the embryo until it reaches the posterior wall, two ventricles are produced, with a partition or septum between. As, however, the septum in this case is double, and unattached posteriorly, he said it was necessary, in order to complete the structure, to suppose the fibres forming the posterior border of the septal duplicature as coalescing or anastomosing with corresponding fibres of the posterior wall, whilst the fibres of the two halves of the duplicature itself are blended with each other. In this way, as he explained, there results a single septum connected posteriorly, and constituted in a manner which remarkably accords with the structure discovered by dissecting the adult heart. Thus, when both ventricles are dissected at the same time, the fibres forming the external layers posteriorly are found to be for the most part common to both; in other words, the fibres on the back part of the left ventricle cross over the posterior coronary tract, and pass on to the right ventricle; whereas, in front, with the exception of a large cross band at the base, the fibres of the right and of the left ventricle respectively dip inward at the anterior coronary tract, as if altogether independent of each other,—an arrangement which induced Winslow to regard the heart as consisting of two muscles enveloped in a third. When, moreover, the so-called common fibres, posteriorly, are dissected layer by layer simultaneously with the independent anterior fibres, it is found that both pass through the same changes of direction; and the same rule holds good with the fibres of the septum.

Another possible mode of explaining the septum, as the Lecturer showed, is to regard the layers entering into the formation of the left ventricle as splitting up posteriorly, the one half of each layer winding round to form the right ventricle, and then dipping in front to form the right half of the septum, whilst the other half proceeds immediately forwards to form the left half of the septum.

Both ventricles thus appear to be formed on the same general plan, but they differ materially in the structure of their apices; and the question arises, Which is the *primary* or *typical ventricle?* Now, while the fibres of the left ventricle enter its apex in a spiral manner by a species of involution similar to that which would be produced by rolling a sheet of muscle into a cone, those of the right ventricle simply bend or double on themselves. Moreover, as the Lecturer suggested, were we to split the septum into two, assigning to each ventricle its proper share, and then apply the cut ends of the common fibres (which cross from the left to the right ventricle posteriorly) to their corresponding fibres in the left half of the septum, we should find that we had still a perfect whole—in other words, a complete system of external and internal spirals; whereas, the fibres of the right ventricle and its half of the septum, treated in the same way, would represent only a part of a more complete system—a portion nipped off, as it were, from the side of the perfect cone. Accordingly, if we would dissect the left ventricle, and especially its apex, symmetrically, we must detach the right ventricle as if it were of no account, and dissect layer after layer of the septum *pari passu* with the layers of the left ventricular wall generally; on the other hand, the right ventricle can be dissected only in connection with the left.

For these reasons the Lecturer is inclined to regard the left ventricle as the typical one, and the right as a mere segment thereof; and, in further corroboration of this opinion, he referred to the shape of the right and left ventricular cavities, as shown by casts of their interior. The left always yields a beautifully finished and perfect right-handed conical screw; while the cast of the right ventricle, although it has the same twist, represents only an incomplete portion. This statement was illustrated by a wax-cast of the ventricles of the heart of a deer.

In conclusion, the Lecturer remarked that the arrangement of the fibres composing the ventricles of the mammalian heart, as he had endeavoured to expose it, is characterized by comparative simplicity, and harmonizes perfectly with what is known of the heart's movements.

The matters touched on by the Lecturer are more fully treated of, and the descriptions copiously illustrated by figures, in his paper to the Royal Society, entitled, "On the Arrangement of the Muscular Fibres of the Ventricular Portion of the Vertebrate Heart." By JAMES PETTIGREW, Esq. Communicated by JOHN GOODSIR, Esq., Professor of Anatomy in the University of Edinburgh. Received, Nov. 22, 1859.

MEDICAL JURISPRUDENCE.

RAPE EFFECTED DURING INSENSIBILITY CAUSED BY MAGNETISM.

Margaret A——, 18 years of age, believing herself to be out of health, went to consult C——, exercising at Marseilles the profession of a therapeutic magnetiser. She visited him daily.

Four months and a half afterwards, she discovered that she was pregnant, and complained to the authorities, who directed Dr Coste, Director of the School of Medicine, and Dr Brognier, Surgeon-in-chief, "to determine the date of the pregnancy; and, in the second place, to reply to the question whether Margaret A—— might have been violated, and rendered pregnant contrary to her will—that is to say, if her volition could have been completely or partially annihilated by magnetism."

The medical inspectors were satisfied that the pregnancy did not extend further back than four months and a half; and, founding their opinion upon the report made to the Academy of Medicine in 1831, by M. Husson, concluded, that as an individual, while in the magnetic sleep, is insensible to every kind of torture, it is rational to admit that sexual intercourse might take place with a young female without the participation of her will, and without her being conscious of the act, and, consequently, without her being able to resist the act consummated upon her.

The opinion of Drs Coste and Brognier was confirmed by that of M. Devergie of Paris.—*Gazette Médicale de Paris.*

Part Fourth.

MEDICAL NEWS.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

SESSION XL., 1860–61. MEETING I.

Wednesday, *November* 7, 1860.—BENJAMIN BELL, Esq., President of the Society, in the Chair.

I. TRICHINA SPIRALIS.

Mr Turner exhibited, under the microscope, several beautiful specimens of the trichina spiralis in the muscles of the cat. To the naked eye these muscles presented nothing peculiar; but, under low magnifying powers, transparent rounded cysts were perceived among the muscular fibres, containing the worms coiled up in the usual way. These preparations had been obtained in certain experiments on the propagation of the trichina, performed last summer, the results of which were recorded in the last September number of this *Journal* (p. 209).

II. SPECIMEN OF ELBOW-JOINT AFTER RESECTION.

Mr Edwards remarked on the great rarity of preparations illustrating the condition of the elbow-joint after the operation of excision. Wagner, in his work on the subject, had described only a few specimens which he had succeeded in collecting. In the case which he now brought under the notice of the Society, he had removed the elbow-joint, on account of disease, about a year and a-half ago, and the operation had been quite successful at the time; but in consequence of the formation, at a later period, of abscesses higher up, attended by disease of the humerus, the arm required to be amputated. In the preparation of the elbow-joint which he now exhibited, the fibrous union of the divided ends of the bones could be well seen; and Mr Edwards directed attention to certain small nodules of bone at the lower end of the humerus, which he suggested were rudimentary condyles of new growth.

III. DISEASE OF KNEE-JOINT: CARTILAGINOUS CONDITION OF BURSA PATELLÆ.

Mr Edwards showed a preparation of diseased knee-joint, amputated in consequence of ulceration of the cartilages. A peculiar cartilaginous condition of the bursa patellæ was demonstrated. Previous to amputation, the hard body had been mistaken for a portion of the patella, which was believed to have been fractured by a fall upon the knee, from which the disease of the joint had originated.

IV. SPLINT FOR MORBUS COXÆ.

Mr Edwards exhibited a splint for hip-joint disease, the invention of Dr Sayre, of New York, which had been brought under his notice by Dr Smith, of Massachusetts. The description of the instrument, with remarks on its use, will be found in the present number of the *Journal* (p. 517).

V. *Dr Handyside* then read a

CASE OF AMPUTATION BENEATH THE TROCHANTERS ON ACCOUNT OF SPREADING GANGRENE, IN WHICH ACUPRESSURE WAS SUCCESSFULLY EMPLOYED.

(*This Paper is contained in the present number of the Journal, page* 504.)

Mr Edwards had found acupressure very efficient, doing all it *professed* to do, viz.—arresting bleeding from cut arteries or veins, with the advantage that the needles can be more speedily removed than the ligatures could be. He had withdrawn the needles after thirty-six hours in a recent amputation of the arm; and, about the same period, in other operations on the ankle-joint, the mamma, tumours, etc. In these cases he had used the needles alone; in one case of amputation of the thigh, however, the femoral artery had not been properly secured by acupressure, and had to be ligatured. The patient being an old, feeble man, he did not think it justifiable to go out of the usual practice in his case; but, had he persevered, and been more skilful in applying the pins, he had no doubt the case would have done them as much credit as Dr Handyside's.

Dr Gillespie doubted the advantages of substituting acupressure for the use of the ligature, though he believed it might be serviceable in a few special cases. He instanced a case of amputation of the leg below the knee which he had just performed, and in which he did not think the needles would have suited. The patient's limb had been crushed between the rollers of a paper-making machine, causing compound fracture of the tibia and fibula, and extensive laceration of the soft parts. In amputating, the flaps could not be made in the usual way, but had to be taken where the tissues were uninjured. Six arteries were tied in the course of the operation. Dr Gillespie believed, that if, in this case, needles had been employed, the twelve punctures made by them in a flap disposed to mortification were more likely to prove injurious than the ordinary ligatures. Dr Gillespie had not found, in his experience, that the ligatures were attended with the bad effects which had been ascribed to them; and he believed that pyæmia after operations was attributable to other causes, and was not due to the use of the ligature, as had been sometimes asserted.

Professor Miller said that there were two points in Dr Handyside's paper on which he would remark. The first was the surgical fact of successful amputation of the thigh—a rare fact by itself, but still more rare when the operation was performed for spreading gangrene. In the present case much must be ascribed to the skill of the operator, the good country air, and the youth of the patient. The favourable result was as great a credit to the operator as it was a benefit to his patient. The second point to be considered was, How much was to be attributed to acupressure in the success of the operation? He doubted whether any benefit had been derived from it. On this subject he belonged to the old school, because, like Dr Gillespie, he had not seen any bad effects from the ligature to shake his confidence in it. The ligature had the advantage of double accuracy,—first, in completely securing the vessel; and, secondly, in compressing the arterial orifice, and *nothing else.* In acupressure, on the other hand, it appeared to him impossible to limit the needle to the bleeding point, so as to avoid including along with it the vein, and probably also the nerve. But it was well known that veins were extremely intolerant of pressure, and could not be subjected to it without the most hazardous consequences. In regard to dexterity of performance, he did not think that vessels could be secured more quickly or more neatly by acupressure than by ligature. It had been alleged that union by the first intention would be promoted by the employment of acupressure; but he was of opinion that the same average amount of suppuration occurred after the needles as after ligature. If it had been otherwise, a greater number of cases of union by the first intention would have been brought forward. He had noticed one little fact, which showed that needles could give rise to irritation and the formation of pus. In operations for harelip, where surgeons had been long in the habit of using needles, he had observed that they left a notch or mark in the skin, showing that suppuration had taken place. In consequence of this circumstance he had latterly given up the use of needles, and employed the metallic suture instead of them. In forming his opinion he had not been influenced by prejudices in favour of old practice, nor indifference to novelties in surgery; but it appeared to him that, for practical usefulness, success, and even the æsthetics of the subject, the ligature was, on the whole, preferable to acupressure—it was more efficient and more safe.

Mr Edwards considered the pressure exerted by the twisted suture on the needles in harelip to be the cause of the suppuration, and the subsequent mark in the skin. He reminded the Society that acupressure was in its infancy, and that the ligature had been as hardly spoken of when it was of the same age; and, moreover, that those who had tried the pins, and spoken well of them, should not be supposed to be antagonists to the ligature, the practical surgeon's best friend.

Dr Watson remarked, that the objects proposed by Dr Simpson in his paper upon Acupressure were,—1*st*, to arrest arterial hæmorrhage; and, 2*d*, to attain, with something like certainty, primary union in amputation, the infrequency of which in wounds of any considerable size was by Dr Simpson attributed to the skein of ligatures. Cases like that detailed by Dr Handyside proved indubitably that hæmorrhage from the largest arteries of the extremities could be commanded by the needles. But the same result had always followed the proper employment of the ligature; and Dr Watson had not yet found any facts or arguments to convince him of the superiority of acupressure. He had taken considerable pains to inform himself upon this subject; and he had very lately seen some of the cases of amputation performed by his friend, Dr Greig of Dundee, who, so far as practical experience goes, was well entitled to speak of the results of acupressure. Dr Greig by no means used acupressure in every case. In some he employed it alone; in others, both needles and ligatures; and in others ligatures alone, as seemed expedient; and Dr Greig's experience, like that of other surgeons, was, that acupressure was not universally applicable, and that union by the first intention without suppuration had *never* resulted from the use of acupressure. What advantages, then, did acupressure possess over the use of ligatures? Was there any advantage in the absence of ligatures communicating between the surface and the deeper parts of a wound, which experience proves does suppurate in the great majority of cases?—for this was all that acupressure secured. Dr Watson thought not; for, along the track of these very ligatures, the pus, when it did form, found a ready vent, and thus prevented the cavity of the stump being converted into the sac of one great abscess, or the *nidus* of several small ones. Dr Watson ascribed the absence of union by the first intention, in most cases of amputation, not to the use of ligatures, but to the following causes:—1*st*, The irregularity, and therefore want of absolute apposition, of the cut surfaces; 2*d*, The state of the patient's constitution in most cases where amputation was had recourse to; and, 3*d*, The most important cause of all arose from the nearly uniform practice of stitching up stumps immediately after securing the vessels which were seen to bleed. The consequence was, that, oozing ensuing afterwards, the cut surfaces were kept apart by a coagulum, which, acting like a foreign body, induced suppuration. Surgeons had devoted their special attention to overcoming the last of these causes—1*st*, By being careful to tie every arterial vessel which bleeds, and thus diminishing the sources of after-bleeding; and, 2*d*, as was long ago recommended by Mr Liston, by not stitching up a stump, or large wound, till some hours after the operation, when the bleeding had ceased and the wound was glazed with lymph. The best results had accrued from this plan of after-treatment, which had only been abandoned on account of its unseemliness, and the pain and alarm occasioned to the patient by a second operation. The admirable results of this practice were, however, still occasionally seen in instances where a stump had to be opened up on account of profuse after-bleeding. Dr Watson had such a case under his care in the Hospital lately, when in charge of Mr Spence's wards, where union by the first intention of the whole stump had occurred, except at the two points, out of which hung a bundle of ligatures; and at no time during the three weeks, while these ligatures remained within the stump, had there been more discharge than sufficient to moisten the ligatures themselves. These "*setons*," as some who depreciated the value of the ligature called them, most assuredly created no annoyance in this instance. But the needle which effected acupressure was by no means so innocuous as some supposed. Dr Watson had heard of sloughing of flaps following its employment. He believed, from patients he had seen, and cicatrices which remained, that suppuration along the needle track sometimes occurred; and he could instance, from his own experience, a most distressing result from the employment of *very* temporary acupressure. Having lately to remove a testicle, and being short of assistants, he introduced a harelip needle beneath the cord, as it issued from the external abdominal ring, so as to restrain all hæmorrhage during the operation from the vessels of the cord. After the testis had been removed, the open mouths of these vessels were tied, and then the acupressure immediately removed. The results were, union by the first intention of the scrotal wound, except where the ligatures hung out, and the formation of an abscess along the track of the needle, followed by inflammation extending up the inguinal canal, and giving rise to suppuration of a diffuse character beneath and among the muscles of the abdominal wall. Such considerations and such experiences led Dr Watson to conclude in favour of the ligature, as combining simplicity, safety, and efficiency in its application and in its results.

Dr Alexander Simpson thought that it was bringing an unfair argument against acupressure, to say that it did not always produce union by the first intention, which no one had ever averred that the needles were of themselves able to effect, and which was a result dependent on various circumstances, some of them at times beyond the control of the surgeon. It was very remarkable, he observed, that the principal objections against acupressure were theoretical, and advanced by those who had not tried it in practice; while we heard of no complaints against it from those surgeons who had employed it in their operations. It had been proved, however, by experience, that the needles were sufficient to secure the largest vessels; that they could be removed with safety in twenty-four or forty-eight hours; and that no suppuration followed. It appeared to him, therefore, that the time had arrived when theory should end and practice should begin. He did not think that the application of the ligature was always so simple, or the security afforded by it always so great, that no further improvement in the mode of arresting hæmorrhage was required. He had great difficulty in believing that the presence of ligatures, acting as setons to draw off the pus from a stump, could be of any real service, as some surgeons averred; and he maintained that they could be of no service whatever in any case where the surgeon had taken all due care to *prevent the formation of pus* between the raw surfaces of an amputation wound. When surgeons should have begun, he added, to make the great advance in surgery of trying to produce union by the first intention after amputations in the great majority, instead of in the small minority, of their cases, then they would find that such union was impossible in the whole extent of the wound, so long as they had the sloughing extremities of the arteries and the attached organic ligatures lying between the opposed surfaces; they would be obliged, therefore, to seek out some means of securing the vessels without introducing causes of suppuration, and ulceration, and gangrene, into the wounds; and such cases as that related by Dr Handyside, abundantly proved that in acupressure such a means had already been discovered.

Dr John Struthers referred to a case in which amputation of the thigh had been performed by his brother, Dr James Struthers, of Leith, as being the first instance in which an artery of large size had been secured by Dr Simpson's method of acupressure. The case was not one in which union by the first intention could have been expected, but the operation had been completely successful. He was of opinion, from what he had seen of it, and from its analogy with the metallic suture, that acupressure ought to be fairly tested by its practical results, and that our public hospitals afforded the best field for ascertaining its true value. The metallic suture had been at first opposed by surgeons, who now universally adopted it.

Professor Miller distinguished innovations from improvements in surgery; and, while hospital surgeons should adopt the latter, he maintained that they should exercise due reserve in regard to the former.

Mr Benjamin Bell thought there was an undue tendency on the part of the advocates of acupressure to undervalue the advantages of the ligature. It should not be forgotten that the ligature had yielded most successful results in the hands of our surgeons for many years past.

Dr Handyside had found that the application of the needles was very easily managed; and he saw no difficulty in securing the bleeding vessels alone, and avoiding injurious pressure on the vein or nerve in the neighbourhood of the artery. It was a great advantage that the needles could be withdrawn so soon after an operation; for, in the use of ligatures, there was always some anxiety till the period of their separation; and it was well known that the risk of secondary hæmorrhage was increased by prolonged contact of the ligature with the coats of the artery. But he did not press the adoption of acupressure in place of the ligature: all he asked was, that the Society should suspend their judgment till further experience; and, meanwhile, that they would attach credit to the statements of those who made trial of this new method. It was matter of regret to him that in the Edinburgh Infirmary acupressure had not been practised, while the hospital surgeons of England, France, and America had already made a study of it. Since there was nothing in the proposal contrary to sound pathology, and since no bad results had followed from its employment, he certainly thought that it deserved a fair trial. If the case which he had read had been one of simple traumatic amputation, he believed that the wound would have healed by the first intention; for the suppuration which took place was undoubtedly due to the irritation of the lymphatics, caused by absorption from the gangrenous tissues. As a general rule, he was of opinion that less impediment to healing by the first intention would be offered by acupressure than by ligature of the vessels. At the same time, acupressure was susceptible of improvement. It was unnecessary to use long needles transfixing the flaps, as had been done at first; a short needle with a wire thread attached, by which it could be withdrawn, was all that was required.

PROCEEDINGS OF THE EDINBURGH OBSTETRICAL SOCIETY.

SESSION XIX.—MEETING I.

November 23, 1859.—Dr Moir, *President*, in the Chair.

I. AMPUTATION OF THE CERVIX UTERI FOR CANCROID DEGENERATION.

In the absence of Professor Simpson, *Dr Alexander R. Simpson* laid before the Society preparations of the cervix uteri of two patients, who were the subjects of cancroid disease of that organ. The two preparations showed remarkably well the different forms which the same disease may assume in different instances; for while in one of them, the smaller, the morbid change consisted simply in the development of masses of heterologous cells, having the character of scaly epithelial cells, in the interstices of the ordinary tissues of the part,—in the other and larger preparation, there was a further morbid change superadded, consisting in the development of an enormous number of villous papillary projections, growing on the surface of the part, and dividing and subdividing till the whole assumed a marked dendritic appearance. The one cervix, in short, presented an example of the ordinary cancroid growth so frequently met with in other parts of the body; while the other was an equally characteristic example of the form which the disease is particularly liable to take on this organ, and which was familiar to all as the true cauliflower excrescence of the uterus. In both cases the amputation of the cervix had been effected by means of the écraseur of M. Chassaignac. In the case of the patient from whom the smaller variety of tumour had been removed, and who was operated on about two months ago, the straight-shaped instrument had been employed. The use of this form of instrument rendered it necessary to pull down the whole uterus, by means of strong hooked forceps or vulsella, so as to bring the vaginal portion outside the vulva; and such a forcible and extensive displacement of the organ must, doubtless, prove a source of danger to patients thus operated upon. To avoid all risk from this source, on the occasion of the performance of the second operation, a fortnight ago, Professor Simpson had made use of the écraseur which was curved near the point, and which admitted of the application of the chain, without any dragging down or exposure of the uterus at all. The aid of a number of assistants could be dispensed with when the operation was performed by means of such a curved instrument; for the whole process then consisted, 1st, of inserting into the cervix uteri a strong vulsellum, by means of which the only assistant whose presence was necessary might keep the organ steadily fixed, while the chain was being carefully applied and adjusted at a safe distance above the line of diseased and altered tissue; and 2dly, of then slowly working the instrument until the parts it embraced were all sawn through. The patient lay in a perfectly unconstrained position, on her back, during the performance of the operation, and it was possible to complete the whole operation without exposing her person in any degree. In fact, in operating with a curved instrument, everything was done by touch alone, while, in using the straight one, we had to call in the aid of sight as well. No accident of a grave character had occurred in immediate connection with the operation in either of these two cases. In the woman from whom the cauliflower excrescence had been removed, the amputation had been too rapidly performed, and an oozing of blood had taken place for two days subsequently, not to such a degree as to amount to flooding, or to give rise to the slightest alarm, but pretty nearly as much as we sometimes see in women for a day or two after their confinement. Afterwards she had a slight attack of phlegmasia dolens in the right leg, but from that she was now recovering. The other patient was threatened with an attack of pelvic cellulitis, and remained for some time in an anxious condition, but ultimately she got perfectly well. Amputation of the cervix uteri by means of the écraseur was not always, however, so successful as it has proved to be in these two cases. When in Berlin, two years ago, he (Dr Alexander R. Simpson) had heard mention made in the Obstetrical Society there, of a case where the operation had proved fatal in that city in the hands of Professor Langenbeck, one of the most skilful surgeons in Europe. The loop of the chain had been applied high up, and during the working of the instrument a portion of the vault of the vagina had been dragged in, and the consequence was, that the peritoneum was opened into, and the patient speedily died.

Dr George Keith stated that he had under his care at present a patient who was the subject of cancroid disease of the cervix uteri. It had assumed the form of the cauliflower excrescence, and had given rise to frequent and severe hæmorrhages, which had greatly reduced the patient's strength. The disease had invaded the organ to too great an extent to admit of its complete eradication, but he had removed the most projecting soft part of the cancroid mass by means of the écraseur, with this good result, that for some months the patient had been free from hæmorrhage, and had recovered in a great degree her health and strength.

II. SPURIOUS PREGNANCY.

Dr Keiller made some observations on spurious pregnancy, and particularly referred to one case which had been cured—the parietes of the abdomen having assumed their normal flattening. He also mentioned a very curious circumstance in connection with this case,—viz., that after the patient had been cured, the inhalation of chloroform had the effect of inducing a return to that state of projection of the anterior abdominal wall, which is one of the most constant and striking phenomena of spurious pregnancy.

MEETING II.

December 21, 1859.—Dr PATTISON in the Chair.

I. DISEASE OF THE UMBILICAL VEIN.

Dr Alex. R. Simpson showed a preparation of an umbilical cord, in which the vein was seen to have undergone a peculiar kind of degeneration, such as he had nowhere been able to find described as occurring in this particular vessel, and which gave it the appearance of being affected with atheromatous degeneration of its inner coat. But, on microscopic examination, it was found that the morbid change that had occurred was seated chiefly in the muscular coat, and consisted of a kind of fatty degeneration of the muscular fibres. The child to which the cord belonged had arrived to the end of the fifth month, and was born dead; and its death had perhaps been due to the diseased condition of the umbilical vein, as the placenta had been healthy, and no morbid change could be detected in the body of the fœtus.

II. PYÆMIA IN AN INFANT.

Dr William Ziegler related the history of a case where pyæmia had sprung up in an infant a few days after birth. The disease seemed to have taken origin in ulceration and inflammation occurring at the umbilicus, immediately after the decadence of the cord.

III. CASE OF MONSTROSITY.

Dr Keiller exhibited an anencephalous fœtus, which presented at the same time a bifid spine.

UNIVERSITY OF EDINBURGH—MEETING OF THE GENERAL COUNCIL.

The statutory half-yearly meeting of the General Council of the University of Edinburgh was held on Friday, 26th October, at one o'clock, in Queen Street Hall. Sir DAVID BREWSTER, Vice-Chancellor and Principal, presided; and there were also present the Solicitor-General, Dr Alexander Wood, Professor Christison, and Dr John Brown, members of the University Court; the Hon. Lord Neaves; Professors Pillans, Lee, Swinton, Montgomerie Bell, Laycock, Aytoun, Balfour, Blackie, M'Dougall, Kelland, and Allman; Mr Small, librarian; and Mr Smith, secretary of the University.

Dr CRAWFORD opened the proceedings with prayer.

The SECRETARY read the minutes of last meeting, which were approved of.

MIDDLE-CLASS EXAMINATIONS.—The SECRETARY read the deliverance of the University Court on the representation of the General Council of 17th April last, on Middle-Class Examinations. The deliverance was to the effect that the Court concurred with the General Council as to the advantage of instituting a University examination, equivalent to the middle-class examinations of the English Universities; and the Court had the satisfaction to learn that a measure relating to this subject was now before the Senatus Academicus of the University. This announcement was received with applause, and elicited no discussion.

THE PATRONAGE OF THE UNIVERSITY.—The SECRETARY then read the deliverance by the University Court on the representation of the General Council of 17th April, that it would be expedient to transfer the patronage of the University from the Curatorial body to the University Court. The deliverance was, that the Court, after careful consideration, were of opinion that it was not expedient further to entertain the question involved in the representation of the General Council. After some discussion, the Council agreed not to press this question at present.

REPRESENTATION OF THE SCOTTISH UNIVERSITIES.—Mr GEORGE STEEL then moved—"That the General Council represent unto the University Court the importance of bringing before the notice of Parliament and of her Majesty's Government, the just claims of the Scotch Universities to have three separate representatives in the House of Commons, of whom one shall be returned by the University of Edinburgh, one by the University of Glasgow, and one by the Universities of Aberdeen and St Andrews. In his remarks, Mr Steel opposed the argument, that the Universities of Oxford and Cambridge were represented, not as corporations of learned men, but as possessors of property; and he pointed out the advantages to the community which would result from the special representation of the educated classes. The motion was seconded by Sir HENRY MONCRIEFF; and opposed by Mr MUIRHEAD, Advocate, and Professor BLACKIE. On being put, it was carried by an immense majority.

CHAIR OF POLITICAL ECONOMY.—Sheriff HALLARD moved—"That it be represented to the University Court, that, in the opinion of the General Council, a separate and distinct Chair of Political Economy ought to be established in the University." After considerable discussion, the motion was agreed to.

The subject of ENTRANCE EXAMINATIONS was then introduced by Mr NICHOLSON, Advocate, in the following motion:—"That the General Council represent to the University Court the importance of instituting an Entrance Examination on the subjects which form the studies of the first year of an Arts Curriculum; the examination being limited to those students who wish the session in which they are entering to be reckoned an academic year." An animated debate ensued, Professor BLACKIE seconding, and Professor PILLANS, and the Rev. DAVID SMITH, Weston, opposing the motion, which, however, on a show of hands, was carried by a large majority.

PROPOSED COMMON HALL.—Professor CHRISTISON moved the adoption of the following motion:—"That the General Council represent to the University Court the great necessity for obtaining a Common Hall in which the meetings of the General Council, and other meetings for University purposes, may be held." Referring to the appointment of a committee at the meeting of the General Council in April last, on the subject of a Common Hall, Dr Christison said the committee had met twice, and they considered that the best way to put the matter into proper shape was to lay a representation on the subject before the University Court. He then read the Report of the Committee, which stated that three modes of proceeding in regard to the erection of a Common Hall had been under consideration. The first was, that, after the removal of the Natural History Museum to its new position, certain class-rooms might be transferred to that Museum, by which spare room would be obtained for the erection of a Common Hall within the University. The second proposal was to build a commodious hall on some convenient site; and the third, that those interested in the University should join the public at large in erecting a great City Hall, the want of which was now much felt for a variety of purposes, and which could be easily made available for the largest University meetings. In regard to the two first modes, either of which would be satisfactory, the committee saw no difficulty except to provide the necessary funds. The General Council now numbered 1760, and the students 1500; and, if the public were to be admitted to certain University meetings, a hall capable of accommodating 2500 persons would not be more than sufficient. The committee saw no prospect of funds being obtained for that purpose without aid from Government; and they saw no prospect of receiving Government aid to a large amount for the present. The committee had not formed any decided opinion as to the third proposed mode of proceeding—combining with the general public in erecting a City Hall—and they were even unable to say what probability there was that such a hall would be erected. Professor Christison, after reading the Report, referred to the necessity of a larger hall being obtained; and concluded by proposing the adoption of his motion, at the same time expressing his conviction that the University Court would do all they could to obtain a hall. Dr ALEXANDER WOOD seconded the motion, which was unanimously agreed to.

Some conversation took place as to the appointment of a Committee of Business; but it was agreed that none should be appointed, Professor CHRISTISON remarking that he had no doubt the Secretary, Mr Smith, was perfectly competent to put the business in order before the meeting.

The proceedings were closed by Professor CRAWFORD pronouncing the benediction.

PRELIMINARY EXAMINATION OF THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH, FOR THE DOUBLE QUALIFICATION,

Held November 3, 1860.

I.—LITERARY DEPARTMENT.

N.B.—*Those whose themes are deemed equal to the value of* 75 *from Nos.* I. *and* II., *or from Nos.* I., II., *and* VI., *will be admitted to the simple Pass. Nos.* IV., V., *and* VI. *are for Honours.*

I.

There was among the banished Athenians, Thrasybulus, a gallant man, and illustrious at home, who, thinking that something ought to be attempted for his country and the common safety, even at the hazard of life, gathered together the exiles, and seized upon Phyle, a fort of the Athenians.	Sum inter exul Atheniensis, Thrasybulus, vir strenuus et nobilis domus, qui ratus aliquis audeo pro patria, et communis salus, vel cum periculum vita, contraho exul, et occupo Phyle, castellum Atheniensis.

Perfect answer = 50.

II.

Jugurtha, uba primum adolevit, pollens viribus, decora facie, sed multo maxime ingenio validus, non se luxui neque inertiae corrumpendum dedit; sed, uti mos gentis illius est, equitare, jaculari, cursu cum aequalibus certare; et, cum omnes gloria anteiret, omnibus tamen carus esse: ad hoc pleraque tempora in venando agere, leonem atque alias feras primus aut in primis ferire: plurimum facere, minimum ipse de se loqui. Quibus rebus Micipsa, tametsi initio laetus fuerat, existumans virtutem Jugurthae regno suo gloriae fore; tamen, postquam hominem adolescentem, exacta sua aetate, et parvis liberis, magis magisque crescere intellegit, vehementer eo negotio permotus, multa cum animo suo volvebat. Terrebat eum natura mortalium, avida imperii et praeceps ad explendam animi cupidinem: praeterea opportunitas suaeque et liberorum aetatis, quae etiam mediocres viros spe praedae transvorsos agit: ad hoc, studia Numidarum in Jugurtham accensa; ex quibus, si talem virum dolis interfecisset, ne qua seditio aut bellum oriretur, anxius erat.

Perfect answer = 50.

In both, 75 at least required for a simple Pass.

III.

"Who are to be attacked first (says Scipio), after what manner and at what time, hear, if you please, in a few words." Which as they all desired, he proceeds. "The night will be the fittest for this purpose, for so we shall strike a great terror into the enemy; nor will any of their allies dare to succour them in the dark."	"Quis sum invado primus (inquam Scipio) quis modus et qui tempus, si tu placeo, audio paucus." Qui cum omnis cupio pergo. "Nox sum aptus hic res, nam ita incutio magnus terror hostis; nec quisquam socius audeo succurro ille in tenebrae."

IV.

Publius Cornelius Scipio nondum annos pueritiae egressus, patrem singulari virtute servavit; nam quum is in pugnâ apud Ticinum contra Annibalem commissâ graviter vulneratus esset, et in hostium manus jamjam venturus esset, filius, interjecto corpore, Poenis irruentibus se opposuit et patrem periculo liberavit. Quae pietas Scipioni postea Aedilitatem petenti favorem populi conciliavit, quum obsisterent Tribuni plebis, negantes rationem ejus esse habendam, quod nondum ad petendum legitima aetas esset: "Si me," inquit Scipio, "omnes Quirites Aedilem facere volunt, satis annorum habeo." Tanto indè favore ad suffragia itum est, ut Tribuni incepto destiterint.

V.

Flavius came to the Roman General, and tells him, that he had entered upon a great design, to finish which there would be occasion for Gracchus's assistance; that he had persuaded all the Praetors, who had revolted to the Carthaginians, to return to the friendship of the Romans.

VI.

Non possidentem multa vocaveris
Recté beatum: rectius occupat
  Nomen beati, qui Deorum
    Muneribus sapienter uti,
Duramque callet pauperiem pati
Pejusque letho flagitium tenet:
  Non ille pro caris amicis
    Aut patria timidus perire.[1]

[1] Translate, and mention the poet whose lines these are, and in what kind of metre they are composed.

II.—SCIENTIFIC DEPARTMENT.

ARITHMETIC, MATHEMATICS, AND NATURAL PHILOSOPHY.

[*In conformity with the published Regulations, the number affixed to each of the questions in this Department indicates the value that will be attached to a full* *and correct answer. The entire sum of the numbers amounts to* 1000, *and Candidates are required to solve questions to the value of at least* 80 *in each of two of the three sections (A., B., and C.) into which the questions are divided, and of* 200 *in all, to entitle them to pass. Those who attain a value of* 500, *or upwards, will be entitled to Certificates of Honour.*]

A. 1. Divide L.181, 17s. $9\frac{1}{2}$d. by 19. [30.]

2. How many lbs. of tea, worth 3s. $9\frac{1}{2}$d. per lb., must be given in exchange for 3 cwts. 1 qr. $17\frac{1}{2}$ lbs. of coffee, worth L.11, 2s. 8d. per cwt. [40.]

3. The weight of water is 1000 ozs. avoirdupois the cubic foot. A vessel of water weighs 13 stone,—what is its solid measure? [30.]

4. Add together the fractions, $\frac{1}{3}$, $\frac{2}{5}$, $\frac{1}{7}$, $\frac{5}{84}$, and $\frac{3}{70}$. [40.]
Reduce 1s. $1\frac{1}{2}$d. to the decimal of a guinea. [40.]

5. Find the compound interest of L.500 in 5 years, at 4 per cent. per annum. [80.]

B. 6. If one side of a triangle be produced, the exterior angle is greater than either of the interior opposite angles. [40.]

7. If, in a circle, two straight lines cut one another at a point which is not the centre, they do not bisect one another. [50.]

8. Find the sum of $\frac{2}{a+b}-\frac{2}{a-b}+\frac{4b}{a^2-b^2}$ [30], and of $\frac{1}{1+x}-\frac{2x}{(1+x)^2}+\frac{x^2}{(1+x)^3}$ [30.]

9. Solve the following equations:—

$$(1.)\ x+\frac{x}{2}-\frac{x}{3}=4x-17. \quad [20.]$$

$$(2.)\ x-\frac{3-x}{5}=3\,\frac{x-1}{2}+\frac{x+1}{5}-\frac{3}{10}. \quad [40.]$$

$$(3.)\ \sqrt{5+x}-\sqrt{5-x}=2. \quad [40.]$$

$$(4.)\ \left.\begin{array}{l}\frac{1}{2}x+\frac{1}{3}y=6\\ \frac{1}{3}x+\frac{1}{2}y=6\frac{1}{2}\end{array}\right\}. \quad [40.]$$

10. When a body of men are to be formed into a square, it is found there are 21 men over; but when it is attempted to add one man to each side of the square, it is found there are 200 men too few. Required the number of men. [80.]

C. 11. Under what circumstances will three forces keep equilibrium amongst themselves when acting at a point? [40.] If two of the forces be equal, and act at right angles to each other, find the relative magnitude and direction of the third force. [40.]

12. Define accelerating force, and uniformly accelerating force. [20.] What is the relation between the space and the time in the latter case? [20.] A falling body has acquired the velocity of 30 miles an hour: from what height has it fallen? [50.]

13. A body is sunk to the depth of a mile in water: find the pressure sustained by a square foot of its surface (from the data of Ex. 3). [50.] Why does a light body tend to rise to the surface? [20.] If the body were a solid cube of one foot in volume, what would be the difference of pressure between its upper and lower face? [50.]

14. Describe the action of the two kinds of lenses used for spectacles, tracing a pencil through each. [40.] If the concave glass be the most powerful, show that the two may be combined so as to form a telescope. Find its magnifying power. [40.]

REPORT OF THE MISSIONARY HOSPITAL IN THE WESTERN SUBURBS OF CANTON, FOR 1859–60.

BY WONG-FUN, M.D., SURGEON, EDIN.

This Hospital, which was first opened by Dr Hobson, in 1848, and carried on without interruption by him until the breaking out of hostilities in 1856, with increasing success, was reopened by the writer of this Report, with the assistance of the Rev. J. Cox, in May 1858, as mentioned in the Report published last year.[1]

Out-patients are prescribed for on four days in the week. Of these, there have been 26,030 in the course of the year; the monthly numbers varying from 815 in January, to 3060 in August; about one-third being females.

The total number of in-patients admitted was 430—a considerable increase over that of the preceding year.

Of surgical operations there have been a very large number, some of which were of considerable interest in a professional point of view. There were 21 cases of tumours, 10 of calculus, 3 of amputation, 17 of cataract, 4 of artificial pupil, and 8 of stricture. Many minor operations were performed for the relief of pterygium, entropium, harelip, phymosis, hæmorrhoids, hydrocele, removal of small tumours, extraction of necrosed bones, etc.

A large number of cases of dropsy were admitted, of which some were simple ascites, and easily cured; others were connected with diseases of the liver and spleen; and some with Bright's disease of the kidney. In these cases the medical treatment, by diuretics, iron, etc., has been generally preferred; tapping being resorted to for occasional relief. Enlargement of the liver and spleen is common; and the size to which these organs sometimes attain is most remarkable. In one case of a boy the spleen was found occupying two-thirds of the abdominal cavity. For these cases, quinine, iron, and iodine have been used, assisted by pressure, friction, blisters, etc. Numerous cases of ovarian dropsy have also been brought in; but there being no remedies for these unattended with great risk, their treatment has been simply palliative, such as occasional tapping, etc. Cases of fever, chronic dysentery, and diarrhœa, of hæmaturia and paralysis of the bladder, of gravel and phosphatic urine, were also met with. The abdominal organs are the principal seats of diseases here, and especially of those from malaria; the diseases of the chest exhibit little variety of character, and nothing of interest. Asthma, especially in children, emphysema, and chronic cough, are common, as may be expected from the phlegmatic constitution of the Chinese. But the other diseases are rare, or only occasionally met with. Two cases of phthisis and one of acute bronchitis were admitted. The last was the only case of acute affection of the lungs I have seen these three years. Pleurisy and pneumonia, as idiopathic affections, have never been seen. Phthisis is more common, and occasionally seen among the out-patients; but this disease is less rapid in its progress here than in Europe; and hæmoptysis in men, and especially in women, is by no means such a sure sign and precursor of it as it is there. Many cases of neuralgia were also treated, some of which were of great intensity, and others were connected with diseases of the brain. In the latter cases, the seton and blister afforded great relief. But, in addition to the ordinary remedies, the new one of local application of morphia has also been tried, the effects of which were quick, though the relief in many cases was only temporary. Among the constitutional diseases treated, were 16 cases of a peculiar species of anæmia, connected apparently with malaria. The patients were all country people and farmers. Without any traceable cause, such as fever, etc., they had been gradually affected with loss of strength, sallowness, and anæmia, their nails, lips, and tongues so bloodless as to appear almost white. Yet, notwithstanding this, they made no special complaint. They were capable of a certain amount of work, even more than could be expected from their anæmic condition; and they consumed a quantity of food equal, or nearly so, to that of people in health. They could not trace their complaints to fever, nor was any peculiar enlargement of the spleen observed in most of them. These have been treated by iron, assisted with quinine. Perhaps, if their blood had been examined, it might have exhibited characters similar to those in leucocythæmia.

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[1] See this *Journal* for January 1860, p. 686.

The following are some cases selected for more particular mention:—

Tumour of the Antrum.—Patient, a middle-aged man, was much annoyed by the continued discharge of a small quantity of matter from the side of a molar tooth. On his cheek was a tumour about the size of an egg. Thinking that the discharge proceeded from an abscess of the antrum, I introduced a trocar into it just above the affected tooth, and evacuated a quantity of matter. The opening was then enlarged, with the hope that, when the discharge ceased, contraction of the antrum would follow. This not taking place, I then, at the request of the patient, removed the front wall of the antrum with bone-pliers. In the cavity of the antrum a polypus was discovered and extracted. After this, the discharge gradually ceased.

Extirpation of a Tumour in the Orbit.—The subject of this operation was a child of four years old. A tumour, about the size of a large potato, was seen over the right eye, closely adherent to the lids. It had been growing for two years, but, from its close attachment to the lids, its precise connection with the orbit could not at first be ascertained. Under chloroform, the portion external to the eye was separated from the lids, and removed, and the remainder was then carefully dissected from the orbit. It filled the orbital cavity, but did not adhere to the bones. The shock on the system was much less than might have been expected from such an operation, though there was some vomiting, and other symptoms of depression. I attributed this partly to the contents of the eye having lost their irritability, so that an injury under such circumstances would be less felt than if it had been inflicted on a sound and healthy organ. The tumour presented, on a section, a finely-grained, homogeneous appearance, but appeared more like a variety of the fibro-plastic tumours than a malignant growth. In it all trace of the eye was lost, except a small part that had a resemblance to a cornea. The orbital cavity healed up rapidly, and the little patient was carried home well in four weeks.

Removal of Breasts.—Eight tumours of the breast were removed. Of these, three were carcinoma, four cystic tumours, and one simple mammary. The largest was a *cystic sarcoma* of 11 lbs. weight. It was of an oblong shape, the long diameter measuring 1 foot, and the short one 7 inches. It began to grow ten years back, and was slow in its progress for a long time, till within the last year, when it increased rapidly. The patient, a woman of 50 years old, had come from a distance of six days' journey, and was very anxious for its removal. Besides the inconvenience of such a great weight, she complained of much pain at one part of the tumour, which could only be neuralgic, considering the simple character of the tumour. As she was very weak, I delayed the operation for some time, and at length undertook it only at her urgent request, and when I saw that time had effected no improvement in her health. Fortunately, as I had anticipated, the attachment of the tumour was loose, so that it was detached in a few minutes. The hæmorrhage was inconsiderable, though the patient appeared faint after the operation. In the course of ten days, most of the wound, which was a foot in length, had healed by the first intention, and in three weeks she was ready to return to her home.

Elephantiasis of the Scrotum.—The subject of this disease was a strong, healthy lad of 18 years old, and a farmer in Tung-Koon. The enlargement of the scrotum began ten years ago. At the time of his admission into the hospital, it was a globular tumour, of about ten inches in diameter, in which the genital organs were completely buried. The skin was thick and hard, and had a warty appearance. It was excised in the following manner by Dr Dickson:—The patient being thoroughly chloroformed, the diseased prepuce was first slit up, and the penis isolated. Incisions were then made at each side, to discover the testicles. These being found, and held apart, the rest of the tumour was rapidly dissected off. The genital organs were then covered with the two flaps formed by the remaining skin at each side. The hæmorrhage was chiefly venous, and very considerable, owing partly to the enlargement of the veins and partly to the length of the operation. It proceeded chiefly from the side of the tumour, and ceased in a great measure when that was detached. About four ligatures were required for the superficial perineal arteries. The testicles were perfectly sound, and imbedded in two hydroceles. This patient was very low immediately and for the first two days after the operation; but he rallied, and the wound healed up in little over a month. The tumour weighed 9 lbs. The centre of it was soft, the meshes of the cellular tissue being large, and filled with fluid; but towards the circumference the tissue was thick and fibrous.

Elephantiasis of the Legs and Scrotum.—This was a most remarkable case. The whole lower half of the body appeared one complete scene of nature's strange metamorphosis in this disease. At the first view, the observer's eye was at once struck with three large tumours, one in front and two behind, shaking and flinging about when the patient showed himself in various attitudes for examination. The tumour in front was an elephantiasis of the scrotum, of the size of a large cocoa-nut. The tumour behind had a circumference of 3½ feet, and was attached to the inner and back part of the right thigh, about its upper half, forming a huge projection below the nates. The last was about one-third the size of the preceding, and attached immediately below it. The legs were not only of immense size, but most strangely altered in form, bearing a greater resemblance to those of the bear than of the elephant. The thighs were about 2½ feet in girth; but on the back of each leg was a series of lumps, placed closely one over another, from the heel up to above the ham, in shape appearing like folds formed of the skin and subcutaneous tissue, but of great size. The patient, aged 44, was a strong and healthy man, and perfectly free from every other disease except that mentioned. His digestion was good, and the muscles so powerfully developed that he appeared more inconvenienced by the size and positions of the tumours than by their weight. He stated that the disease commenced in the legs seventeen years ago; at first with simple enlargement, followed subsequently by the gradual development, at long intervals, of those lumps seen in the legs. The three large tumours were formed within the last five years. He was a grocer for many years in a place not very far hence, called Shek-lung, where, he said, there are at present thirty other individuals affected with elephantiasis of the leg. Respecting the treatment of this patient, it is evident that it could only be partial and palliative. Some of the large tumours might be excised, to relieve him of their weight, and to facilitate his progression. With this view, I selected for operation the tumour at the back, as being the largest in size and most inconvenient in position. The patient being placed under the influence of chloroform, the tumour was included in two long elliptical incisions, and dissection then rapidly proceeded with, which was completed in about a quarter of an hour. The hæmorrhage was mostly venous, and was very considerable. In the course of the operation a vein was encountered, running into the tumour, which appeared to be the external saphena, enlarged to the size of the little finger. The tumour weighed 13 lbs. In structure it was similar to that of the scrotum described above, consisting entirely of cellular substance, soft at the centre, but dense at the circumference. Though there was considerable depression immediately after the operation, yet no great constitutional disturbance followed, and the case progressed very satisfactorily. The patient, after a residence of a few weeks in the hospital, during which he was an object of great curiosity both to natives and foreigners, returned home with a leg much smaller in size, though less wonderful in appearance. Of the cause of elephantiasis, or those special circumstances that give rise to its production in warm climates, or in particular localities and individuals, there is at present no satisfactory knowledge. Of the manner in which the disease was successively developed in this patient, some explanation may be given. Elephantiasis is essentially a disease of the cellular tissue. This, like other dilatable tissues, such as the liver and spleen, is liable to chronic effusion, which, unabsorbed, undergoes in time induration and hypertrophy. In most cases of elephantiasis of the leg the process ends here with simple enlargement. But the skin of this patient was redundant, and encased the muscles like a loose pantaloon, so that folds or bags were formed by the doubling up of the skin and subcutaneous tissues, wherever the looseness of these textures admitted. Hence those lumpy masses and projections, seen at the calf and at the back of the knee. These folds were the result of many years' growth, formed in gradual succession. Time and pressure also gave them differences of shape. Those lowest and first formed, by sustaining most weight and pressure, became hard and flattened, while the upper and recent ones were soft and more projecting. The large tumour operated upon appeared originally to have been one of these folds, which, by receiving, from its dependent position, a large quantity of effused fluid, gradually expanded to the size observed. There is also little doubt that the frequency with which the scrotum is attacked with elephantiasis is greatly owing to the dilatability of its cellular tissue; since in this case, owing to the peculiar extensibility of the skin, similar tumours were also formed in another situation, viz., the thigh.

Extirpation of the Upper Jaw.—The subject of this operation was a lady of a respectable family, who came from a distance of five days' journey on account of a tumour on her left cheek. She was 24 years old, had several children, and was in good health. The tumour began three years ago, and formed, at the time of her admission, a prominent swelling of about 4 inches long and 2 broad on the left side of her face. It appeared to occupy the whole of the upper jaw, but to be limited to it. The hard palate and alveolar arch were considerably depressed, and pushed forward by expansion, as it were, from the antrum. But other bones were not involved, and there was no sign of malignancy. A partial operation was at first performed. Dr Dickson, assisted by Dr Kerr (I myself being laid up at the time), cutting away the osseous wall in front, removed a large portion of the tumour; but, after the operation, the look was still unsightly, and the tumour threatened continued enlargement, especially within the mouth. At the urgent request of the patient and her friends, the more summary operation of extirpation of the upper jaw was performed. The patient sat up during the operation, and was partially under the influence of chloroform. The hæmorrhage was very considerable during the operation, but ceased, in a great measure, when the tumour was turned out. The wound healed up rapidly; and the skin, which appeared redundant at first, contracted almost to its original size. But the voice was affected, from the deficiency of the palate. The tumour was one of considerable rarity, consisting of a mass of cartilaginous cells, that presented, on a section, a honey-comb appearance. It had its origin apparently in the antrum, slightly involving the malar articulation in the course of its growth. The patient quitted the hospital after a residence of nearly half a year, which formed quite an epoch in her life; and there is little doubt that, when she returned home, she carried back with her not only the recollections of European skill, but also of the kindness and sympathies she had here experienced.

Stone Operations.—During the past year, ten cases have been operated on, four of these by Dr Dickson, and the rest by myself. No death has occurred. The stones were of moderate size, and all of uric acid formation. Of these ten cases, three were boys of the respective ages of 6, 8, and 10 years, one an old man of 62, and the rest between the ages of 30 and 40. With the exception of four cases, they all enjoyed ordinary health at the time of operation. The average period of cure was from three to four weeks, the quickest being those of the children. In one person, the treatment was protracted to about a month longer, on account of kidney disease succeeding the operation. In all cases, chloroform was administered.

Large Calculus within the Prepuce.—Among the stones found within the prepuce was one of the size of an egg. It was composed of four pieces of white phosphatic calculus, each about the size of a walnut.

Strictures with Perineal Fistula.—Eight cases of stricture have been treated; six at the anterior part of the urethra, and two behind the bulb. The case with fistula was a Fookeen merchant, who had a stricture behind the bulb, of three years' standing. The fistula was situated close to the verge of the anus, and was the result of a boil there three years ago. When he came to the hospital, not more than a few drops of urine could pass through the urethra. By steady perseverance with the bougie, the natural passage was re-established in a month. The fistula, however, did not contract upon this, it being too large, and its edges hard and callous. These were then made raw, and touched occasionally with caustic; after which they gradually united and closed up the fistula. The treatment lasted three months.

Milky Exudation of the Scrotum.—In my report of last year, I related a case of a singular disease of the scrotum, which consists of the development of a large number of follicles, containing milky fluid, over the skin of that organ. Two similar cases have been met with this year. The one operated upon was a young man, aged 27, from the district of Nam-hoi, and by occupation a greenseller. The disease began four years ago, and had inflicted on him the usual amount of suffering by the occasional oozing of a large quantity of albuminous fluid, the effects of which were most exhausting. This, however, was not a very aggravated case, and the health was comparatively unaffected. I did not in this case make any trial of medical applications or other remedies, as nothing appeared to me surer or simpler than the removal of the diseased skin by the knife, which was accordingly done. As the disease was confined to the anterior part of the scrotum, ample sound skin was found at the sides for covering the testicles; while the greater size and thickness of the scrotum admitted of the diseased skin being easily detached from the subjacent tissues without injuring the tunica vaginalis. The constitutional disturbance following this operation was slight. The wound healed up rapidly, and the new scrotum is now composed of entirely sound skin.

Wounds.—About a dozen cases of gunshot wounds were admitted last year, and also a considerable number of sword wounds. These were chiefly received from pirates, robbers, or rebels. Among these patients were also found a few of the unfortunate refugees from Sze-ooi.

Wound of the Head.—A cut, 2 inches in length, dividing both tables of the frontal bone at about 2 inches above the eyebrow, through which a small quantity of venous blood could be seen oozing forth at every pulsation of the brain. Several severe sword wounds had also been received in the arms and legs. The patient left the hospital before he was completely well, but not before the wound of the head had nearly healed up.

Wound of the Knee.—An incised wound of 4 inches, completely dividing the patella in a transverse direction, and opening into the joint. Patient was a man of 50 years old, and had several threatenings of locked jaw before he was brought in. The case is still under treatment; and though at one time amputation was seriously contemplated, the case assumes at present such a promising character as to afford every hope of saving the limb.

Wounds from the Bursting of Chinese Muskets.—In one case the hand was so completely severed from the wrist that amputation of the forearm had to be performed. The stump healed up in a fortnight. In another, the fingers were shattered close to, and also beyond, the metacarpal joint; and the palm and back of the hand were torn and bruised. A portion of the metacarpal bones had to be removed, to allow the soft parts to come together. The thumb was saved, with most of the palm, which, doubtless, will be still of some service to the patient. This patient was keeping watch one night in his village, when, on hearing the approach of robbers, he fired his piece. It burst, and shattered his hand, by which he was so shocked that he was found standing on the spot motionless. On returning to consciousness his speech was incoherent. Twenty-four hours after, he was brought here by his father, whose grief was uncontrollable for the double loss the son appeared to have sustained, of his hand and of his reason. A strong purge administered procured him such relief, that a sound sleep followed, from which he awoke, to his friends' surprise, quite rational.

Extensive Laceration of the Scalp and Face.—The patient was a middle-aged man, and followed the trade of a carpenter. While he was engaged at his work a large timber fell upon his head, and produced a most severe lacerated wound. The laceration extended in nearly a straight line from the top of the head to the inner angle of the right eye, cutting across in its course the eyebrow and the eyelids close to its inner canthus; and thence it ran in transverse direction across the cheek to a little beyond the ear, passing close to its lobe. The skin included within these two lines was quite detached from the bone, forming a large flap, that carried with it the torn eye-appendages, the cheek, the ear, and the temporal muscle, which was torn from its attachment to the bone. Over the bare skull was a thick layer of ashes, which, doubtless, had been used by the patient's friends as a styptic to stanch the bleeding from the skin. These being washed away, the torn parts were approximated by sutures, special care being bestowed to adjust the torn eye-appendages. The globe of the eye was, fortunately, uninjured. The scalp in front could not at first be approximated, owing to the shrinking of the skin; but, as gradual softening took place by suppuration and poultice, the edges were brought together by plasters. The injury was received some days before the patient was brought to the hospital. The pain was so great, and the hope of life so little, that he intended to have terminated his sufferings by suicide. On admission, he was very low and feverish, the tongue exhibiting a black coating in the centre, which did not disappear for some time. Under the use of stimulants and opiates he gradually rallied. There was no head symptom, no exfoliation of bone, nor sloughing of skin. In a few weeks he left the hospital, with hearing and sight uninjured, and with no deformity except a little at the lower eyelid, which I intended to have remedied by an operation if he had remained.

Opium Poisoning.—About forty cases of opium-poisoning made application here during the last twelve months. Most of those that applied early were saved. They were all cases of attempted suicide; and the subjects, with the exception of two lads of the ages of 12 and 16, and an old man of 70, were all females—prostitutes, servants of prostitutes, and concubines in families. The causes alleged were ill treatment and family quarrels. The treatment adopted was evacuation of the stomach by emetics and stomach-pump; and the use of stimulants, such as ammonia, etc., to which I have lately added the use of belladonna after the evacuation of the stomach. The following case possesses some degree of interest, from the length of time, thirteen hours, during which artificial respiration was employed. The subject was a newly-married woman, aged 19. Dislike of her husband, exasperated by what she conceived to be ill treatment, induced her to attempt suicide. The opium was taken at seven o'clock in the morning; the quantity was 8 drachms of the extract, diluted in spirits. An hour after, she was seen by my assistant, who, finding her quite sensible, administered an emetic. I arrived half an hour after. By this time stupor had commenced. But the emetic not having produced full vomiting, the stomach-pump was immediately introduced, and in an hour and three quarters after the opium was taken the stomach was fully evacuated. Yet rapid absorption of the poison must have taken place; for, before the evacuation was finished, complete insensibility had supervened, with lividity of the face, relaxation of the muscles, small and irregular pulse, and all the symptoms of approaching death. From this state, by the employment of friction and stimulants, etc., a partial return to consciousness was effected, which, however, lasted only a few minutes, the patient speedily relapsing into her former state of complete coma, with symptoms of collapse. Friction and stimulants were repeated, and succeeded in maintaining the colour and the pulse, but only for a while, the great tendency being to relapse into a state in which all the functions appeared suspended. The respiratory centres appeared completely narcotized. The breathing, from being at first gentle, was now nearly extinct, and the pulse small and feeble; and it was evident that the circulation would be arrested if the respiration were not sustained. Recourse was now had to artificial respiration; and, while this was carried on, the pulse gradually rose, the lividity disappeared, and colour returned. For many hours the functions of the lungs were maintained by the artificial assistance of the hand. Generally, after assistance had been given to the lung for some time, it could be left to its spontaneous action, at first for a few minutes, but, five or six hours afterwards, for half an hour or longer. Meanwhile, having some vague impressions of the virtue of belladonna, I rubbed a quantity of the extract over the tongue and the temple, upon which the pupil became fully dilated, but perfectly insensible, and the profound coma was undisturbed. Perhaps more effect would have been produced by the introduction of the extract into the stomach; yet the tongue was moist, and a good quantity should have been absorbed. I was convinced that, if the circulation could be sustained by artificial respiration till the effects of the opium should pass off, life would be saved; and I expected, towards the evening, to have seen some sign of returning consciousness. But though twelve hours had now passed since the opium was taken, there was still no such indication; on the other hand, the patient was getting weaker, and the lungs appeared more powerless. At this time Dr Dickson came in and rendered his assistance. The same treatment was persevered in, though with hope now gradually giving way, as the patient's strength was diminishing. At length, when the evening was far advanced, after sixteen hours had passed since the opium had been taken, some symptoms of returning consciousness began to show themselves. An hour after, full consciousness was restored. With the exception of some pain at the side of the chest, which wholly disappeared in a few days, and some soreness of the skin from the friction and hot applications, the patient appeared to have sustained no material injury from the length and the character of the treatment to which she had been subjected. In this case, with the exception of those short intervals when the lung was left to itself, the artificial respiration was carried on from ten in the morning to eleven at night, a period longer than any during which I have known artificial respiration to have been employed.

Thanks are due to Dr Dickson, who has long shown himself a steady friend of this valuable institution, and has ever been ready to render his able professional services in time of need. During the past year he performed several operations. Assistance has been rendered also on various occasions by Dr Kerr, of the American Hospital. I am also indebted for much laborious assistance to a former pupil of Dr Hobson, Ho-king-mun, now in Dr Dickson's service.

QUARTERLY RETURN OF BIRTHS, DEATHS, AND MARRIAGES.

The present Return embraces the number of births, deaths, and marriages registered during the quarter ending 30th September 1860, in the 995 districts into which Scotland is divided for the purposes of registration. It will be seen that the excessive mortality which prevailed during the previous quarters of this year has abated, and returned to its normal condition; while both births and marriages are rather below the average of former years.

BIRTHS.

24,933 births were registered in Scotland during the third quarter of the year 1860, being 3378 fewer than during the previous quarter, and 1070 fewer than during the third quarter of last year. Allowing for increase of population, this would indicate an annual proportion of 316 births in every ten thousand, or one birth in every 31 persons,—a proportion below the average of the corresponding quarter of the five previous years, which gives the proportion of 322 births in every ten thousand persons.

The proportion of births in the town and country districts varied considerably. Thus, in the 125 town districts, which include all the larger towns, and nearly the exact half of the population as at 1851, the number of births was 13,604; while in the 870 rural districts, numbering an equal population in 1851, the births only amounted to 11,329. The births in the town districts, therefore, occurred in the proportion of 332 in every ten thousand of the estimated population, or one birth to every 30 persons; while in the country districts the proportion was 299 births in every ten thousand, or one birth to every 33 persons.

Of the 24,933 births, 22,668 were legitimate, and 2265 illegitimate, which gives the proportion of 9·08 per cent. of the births as illegitimate, or one illegitimate in every 11 births.

As noticed in former Reports, the proportion of illegitimate births in the country districts exceeded that in the town districts, being, in the former, in the proportion of 10·4 per cent. of the births, or one illegitimate in every 9·5 births; but, in the latter, only 7·9 per cent. of the births, or one illegitimate in every 12·6 births.

Of the 24,933 births registered during the quarter, 12,838 were males, and 12,095 females, being about 107 male to every 100 female births, which is nearly the usual proportion for Scotland, notwithstanding that the females so greatly preponderate in the general population.

Of the births, 8852 were registered during July, 8206 during August, and 7875 during September, thus indicating 285 births daily during July, 264 daily during August, and 262 daily during September. During this year, then, the greatest number of births hitherto was registered in April, when they averaged 314 daily.

DEATHS.

13,846 deaths were registered in Scotland during the third quarter of 1860, being 496 more than during the corresponding quarter of last year, but 4307 fewer than during the previous quarter of this year. The deaths during the quarter were, therefore, in the annual proportion of 175 in every ten thousand of the estimated population, or one death in every 57 persons—a proportion rather below the average of the same quarter in former years, which was at the rate of 178 deaths in every ten thousand persons. This is considerably below the average of the same quarter in England, which, on the ten years' average, from 1850 to 1859, showed the proportion of 204 deaths in every ten thousand persons.

As usual, the deaths in the town districts considerably exceeded those in the country districts. Thus, in the 125 town districts, the deaths numbered 8339, while in the 870 rural districts they amounted to only 5509, thus showing an excess of 2832 deaths in the towns. In other words, the deaths in the towns during the quarter were in the annual proportion of 203 in every ten thousand of the estimated population of the towns, while in the country districts they were only at the annual rate of 145 in every ten thousand persons.

Of the 13,846 deaths registered during the quarter, 5057 were registered in July, 4604 in August, and 4185 in September; thus indicating 163 deaths daily during July, 148 deaths daily during August, and 139 daily during September.

INCREASE OF THE POPULATION.

As the births numbered 24,933, and the deaths 13,846, the natural increase of the population amounted to 11,087 persons. From that number, however, have to be deducted the emigrants during the quarter. From a Return furnished to the Registrar-General by the Emigration Commissioners, it appears that, during the quarter ending 30th September, 33,734 persons emigrated from the ports of Great Britain and Ireland, of which number 2419 were of Scottish origin. If to that number be added 727 as the proportion of those whose origin was not ascertained, the number of the Scottish emigrants during the quarter would amount to 3146, which, deducted from the excess of births over deaths, would show that the *actual* increase of the population during the quarter, irrespective of immigrants, whose numbers cannot be ascertained, amounted to 7941 persons.

MARRIAGES.

4488 Marriages were registered in Scotland during the quarter ending 30th September, being 120 fewer than during the corresponding quarter of last year. This indicates an annual proportion of 56 marriages in every ten thousand of the estimated population, which is the average of the quarter in the five previous years, but very greatly below the English average of marriages during the same quarter, which is at the rate of 81 marriages in every ten thousand persons.

Of the 4488 marriages, 3061 were registered in the 125 town districts, and only 1427 in the 870 country districts; thus indicating that in the towns marriage was contracted in the proportion of 75 marriages in every ten thousand of the estimated population, or one marriage in every 133 persons; while in the country districts only 37 marriages occurred in every ten thousand persons, or one marriage among every 265 persons.

2002 marriages were registered in July, 1387 in August, and 1099 in September.

HEALTH OF THE POPULATION.

The general health of the population has been good during the third quarter of 1860; and the deaths, which had been unprecedentedly high during the previous months of the year, fell during the quarter somewhat lower than the average of the same quarter in former years. Though no virulent epidemic appears to prevail generally, still the Registrars' Notes make it apparent that small-pox has a tendency to assume the epidemic form in various localities. It is much to be regretted that there is no legislative enactment to prevent persons labouring under infectious or contagious diseases being sent by coach, rail, or otherwise, from one place to another. A severe epidemic of small-pox is at present ravaging the fair city of Perth, in consequence of one of its inhabitants, who had never been vaccinated, taking the disease from a person with whom he travelled in a railway car, and who was suffering from small-pox at the time. The Registrar of Beith, in his note for the quarter, has a like tale to tell of the introduction of small-pox into that town. "A woman," he says, "who hawks small wares, had a child which took the small-pox at Irvine. Applying for relief, she was sent to Lochwinnoch, the child's birth-place, and from thence she came to Beith, where the child died. . . . The disease has since spread very rapidly." As such cases are quite common, they show the necessity for legislative interference. Surely the lives of human beings are of more consequence than those of cattle; and if there are stringent enactments regarding infectious diseases among the latter, why should not the people themselves be equally protected, seeing that in such cases they are unable to protect themselves? The usual epidemic diseases of children—measles, scarlatina, and hooping-cough—have prevailed to a greater or lesser extent in various districts; but, speaking generally, these diseases have been mild, and have not resulted in many deaths. It is rather a remarkable circumstance that the town of Leith should seem to be peculiarly liable to suffer from severe epidemics of scarlatina. Since the Registration Act came into operation in 1855, it has twice suffered severely from that epidemic, first in 1856, and again during the past quarter. Gastric and typhus fevers seem to have been less prevalent than usual during the quarter; and the absence of the usual warm weather during July and August appears to have exempted the population, to a very great extent, from the customary autumnal bowel complaints. In a few detached and widely separated localities, diphtheria appears to have manifested itself with considerable virulence; but the inflammatory affections of the respiratory organs, which were so fatal during the previous quarters of this year, appear to have abated during the past quarter. In the district of Tinwald, in Dumfriesshire, a girl five years of age died from the effects of wasps' stings; and in Kirkcowan, in Wigtownshire, another little girl, who was bitten by a viper, died after 29 hours' suffering.

WEATHER.

During the quarter the weather was unusually cold for the season, and was attended by an absence of sunshine, and a humidity of the atmosphere, quite remarkable. The mean temperature of the quarter during the five previous years was 56°·3, but during the past quarter it only amounted to 53°·9. The quarter was further remarkable, in that July was the warmest month, and the only one which nearly reached its average temperature; while August, which in Scotland is usually the warmest month, had a mean temperature of only 54°·4, or nearly 3° below that of July. This low temperature during August was fully accounted for by the fact that it had only about three-fourths of its usual amount of sunshine; and the cloud-covered sky yielded a deposit of 3·79 inches of rain, being 1·24 inch greater than the average fall during that month. During every month the humidity of the atmosphere averaged about 3 per cent. greater than usual; and what was very remarkable, notwithstanding this excessive moisture of the air, the fall of rain during the quarter only amounted to 7·53 inches in depth, being no less than 1·59 inch less than the mean fall of rain during the corresponding quarter of former years. This absence of extreme heat proved favourable to the general health of the population, and they thereby escaped suffering from diarrhœa, dysentery, and cholera to anything like the extent of former seasons; for the prevalence of these diseases seems to bear a kind of constant relation to the rise of temperature.

The mean barometric pressure was 29·988 inches during July, 29·575 inches during August, and 29·868 inches during September. The mean temperature was 57°·3 in July, 54°·4 in August, and 50°·2 in September. The mean temperature of evaporation was 54°·1 in July, 52°·0 in August, and 48°·0 in September. The mean degree of humidity was 83 in July, 85 in August, and 87 in September. The mean depth of rain was 1·82 inch in July, 3·79 inches in August, and 1·92 inch in September. Winds with an easterly point blew 9 days in July, 7 days in August, and 5 days in September. Winds with a westerly point blew 13 days in July, 17 days in August, and 18 days in September.

REPORT BY DR WEISSE, AT THE CELEBRATION OF THE 25TH ANNIVERSARY OF THE NICHOLAS SICK CHILDREN'S HOSPITAL IN ST PETERSBURGH, 6TH DECEMBER, 1859.

It was first in this century, which we may style with justice the era of humanity, that the idea was entertained of providing a fitting asylum for necessitous sick children, not less than for adults, in order to their treatment during disease. The earliest Children's Hospital in Europe was that founded in Paris, in 1802, at the cost of the State. There arose afterwards, in several of the larger cities, institutions designed as Dispensaries for Sick Children; where the little patients were brought at intervals to be seen and prescribed for by the physicians, but where there existed no provision for their residence during their cure. The Russian capital had next, twenty-five years ago, the merit of following the example of Paris, in erecting an actual Children's Hospital, where the patients receive the whole necessary maintenance and treatment during the period of illness. Still later, similar institutions have arisen in Moskow, Vienna, Dresden, Prague, Frankfort on the Mayne, Berlin, Munich, London, Stockholm, and other cities.

In February, 1831, Count Apraxin, with Drs Arendt and Friedeburg, all now dead, had already developed the plan for the erection of a Sick Children's Hospital, to be maintained by public subscription, in St Petersburgh; and they were then successful in securing the approval and aid of Count Benkendorff, a nobleman ever ready to assist in any effort for the relief of suffering humanity. He not only approved of the project, but undertook the office of bringing it under the notice of the Sovereign. As a result of his representations, the Emperor Nicholas was pleased to take the contemplated institution under his protection, and in August, 1834, issued a decree with reference to it. Already in December of the same year, on the birthday of his Majesty, the establishment was opened, and dedicated to its purposes. It stands now as a noble memorial of the philanthropy of Count Benkendorff, who, up to the period of his death in 1844, discharged in it the duties of an honorary curator with the highest acceptation.

Under the presidency of the Count, a committee of distinguished individuals from among the chief nobility, the clergy, the medical profession, and the mercantile classes of the city was soon formed, and received the sanction of the Emperor, with the view of collecting subscriptions, and of otherwise contributing to the success of the benevolent scheme. From among these, Count Apraxin was selected as acting curator; while the appointment of consulting physician was conferred upon Dr Arendt, and that of ordinary physician upon Dr Friedeburg. In 1840, the institution was placed under the special patronage of the Empress.

The Hospital was at first provided with only 60 beds; but it was early discovered that this number was insufficient. In 1835, the number of beds was already increased to 100; and, at the same time, the committee added the provision of a special laboratory. Till 1842, the establishment occupied premises held at a yearly rental, but it became now happily possible to acquire a property to be specially set apart for it. This arose through the munificence of the brothers Paul and Anatol Demidoff, who bestowed on the institution the generous gift of 200,000 Bank roubles (L.8928). To complete the erection of the edifice to be thus devoted, other liberal contributions were added, so that the amount of the building fund rose to 100,000 silver roubles (L.15,625).

Although now subscriptions for the maintenance of the Hospital poured in from many sides, these were still not found sufficiently ample to meet the requisite expenditure, and the committee became perpetually occupied in striving after new sources of revenue. Public concerts, under the Imperial patronage, for which musical talent was found even among amateurs supplied from the highest ranks of the nobility, and at which the Empress attended, together with the sale of a number of publications printed for behoof of the institution, contributed essentially, for several years, towards meeting the outlay. But as this source also began to be less productive, while the attendant arrangements were burdened besides with many difficulties, the institution found itself compelled, in 1850, to appeal to the throne. The late Emperor Nicholas was then pleased to assign an annual fund of 10,000 silver roubles (L.1562), the payment of which was at first promised to be continued for only two years. After the lapse of this period, however, a second decree conferred the same endowment on the Hospital annually, for so long as the funds stood in need of the support. The institution, now become an acknowledged necessity in the metropolis, still enjoys this Imperial bounty, by which its existence is secured for the future; the more especially as Anatol Demidoff, upon whom had been conferred in 1843 an heritable honorary curatorship, has pledged himself to provide a further fund of 2000 silver roubles (L.312) annually, so long as the Imperial grant should be continued.

The Children's Hospital has at present 102 beds; for Anatol Demidoff, its unwearied benefactor, besides his previous large contributions, has undertaken to maintain in it two separate beds at his own charges, the allowance for each being 100 silver roubles (L.15, 12s. 6d.). The 100 beds, belonging regularly to the establishment, are of cast-iron, with hair matrasses, and are so dispersed through 17 larger and smaller apartments, each lofty and well lighted, that, even in a crowded state of the Hospital, the air can always be maintained in a state of purity. Of the beds, 32 are in the division for boys, and the same number in that for girls; with 24 in the department for infectious eruptive fevers, and 12 in that for chronic skin-complaints. The two last divisions, which are on the second floor of the building, are not only completely separated from the other wards, but have no communication with each other.

Sick children, of from 3 to 14 years of age, are daily admitted gratuitously into the institution. For the children of those possessing means, a monthly payment of 5 silver roubles (15s. 7½d.) is demanded for maintenance and medical treatment; but it is a strict rule of the Hospital, that, wherever there is a question of deficiency of accommodation, the poorer is to be admitted before the wealthier applicant. The institution likewise contains a spacious hall, in which children, who do not require to reside in the Hospital, receive daily, at appointed hours, advice and medicines gratuitously. The number applying to this Dispensary amounts to from 6000 to 7000 annually. Its medical superintendents have also the charge of vaccinating gratuitously all applicants.

Besides the physicians appointed for the Dispensary department, there are also assistant physicians for the Hospital, of whom one attends the division for the boys, another that for the girls, and a third that for eruptive diseases, each under the daily superintendence of the principal. For special surgical cases, and for the more important operations, the institution has the privilege of enjoying the assistance of distinguished operators. The names of Arendt, Salomon, Nemmert, Pirogoff and Heyfelder, the latter of whom has officiated as consulting surgeon since 1857, will always be gratefully remembered.

During the whole 25 years of the existence of the institution, the aggregate receipts in its behalf have amounted to 416,288 silver roubles (L.65,045), and the total expenditure has been 387,095 silver roubles (L.60,483); thus leaving L.4562 as a surplus fund. Within the Hospital have been treated, in all, 15,430 cases, of whom have been cured 12,230; while the deaths have been 3127, or a little above 20 per cent. At the Dispensary, 136,661 patients have received treatment.—*Journal für Kinderkrankheiten*, 1860, p. 275.

ON ACUPRESSURE.

Letter to Dr Simpson.

JHELUM, PUNJAUB, *August* 4, 1860.

MY DEAR SIR,—I see, by the public journals, that you have been collecting a number of cases where "acupressure" had been applied for the stoppage of hæmorrhage.

In October 1858, the following case occurred in my civil practice; and the treatment of it at the time, I must confess, I thought not only original, but that I was the first to discover and employ this new method of stopping hæmorrhage. However, your paper upon the subject in December 1858 (which I have not seen), most likely puts that part of the above statement—viz., discovery—quite out of the question.

"Patient æt. 28 years—Mussulman, male.—On the evening of the 6th of October 1858 he had been in a fight, and had received two severe blows on the head; stunned, and carried off the ground, he was brought to the Jhelum Charitable Dispensary on the morning of the 7th October. On examination, I found two severe scalp wounds—one on the left side of the head, produced undoubtedly by some blunt weapon—said to have been an instrument like a 'flail.' This wound was triangular in shape, lacerated at the margin, and the bone beneath depressed to some extent; and a large clot of blood filled the cellular tissue under the scalp, causing great protrusion and swelling of the parts. This clot I broke up and removed with my fingers, to give ease in the examination of the bone beneath, but found simply slight depression. Upon removal of the clot, a very profuse arterial hæmorrhage ensued, and I had to enlarge the wound in the scalp, to get hold of the spurting vessel. I saw it quite distinctly; but from the bad instruments given me, I could not tie it; so I passed a needle through the scalp on one side of the vessel, and made the point return through the scalp on the other side of the vessel, so that the needle (its centre part) lay between the vessel and periosteum. I then passed a thread round both ends of the needle, just sufficiently firm to prevent the recurrence of hæmorrhage. The wound was dressed with simple water-dressing, without any attempt at approximation of the edges.

"8th.—Removed the needle; no hæmorrhage followed. Continue cold water dressing.

"9th.—Wounds suppurating, and a good deal of discharge from the largest.

"A few days after, both wounds were very nearly altogether healed, and the patient discharged."

In January 1859 I operated in the same way on a female, on whose person I opened a deep mammary abscess. She had enormously large breasts; and as the abscess was situated at the very root and under surface of the mamma, I could not get hold of a small vessel that I had cut, and which cold applications, etc., would not stop the hæmorrhage from. I, as in the former case, applied a needle, and all bleeding at once stopped.

I did not, in this case, remove the needle until the third day. After its removal, no bleeding recurred. This last case is from memory, but the first is copied from my case-book.

Until within two months ago, I did not even know that acupressure, and all that has been written upon it, was in existence, further than the operation which I had performed, and which was to me new and original, or I should, long ere this, have sent you the above cases.

You will see by this, that to be in India as an assistant-surgeon, in most cases, is to be behind the medical world fully a year.—I remain, my dear Sir, your sincerely attached pupil,

J. E. Tierney Aitchison, M.D.,
Civil Surgeon, *Jhelum*.

J. Y. Simpson, Professor of Midwifery,
etc., etc., Edinburgh.

ON THE USE OF CALOMEL IN THE REMOVAL OF INSECTS IN SORES.

To the Editor of the Edinburgh Medical Journal.

Colombo, Ceylon, 16*th October* 1860.

Sir,—Having seen in the *Edinburgh Medical Journal* for September 1860, a very excellent paper, written by Dr John Brown, surgeon, Bengal Medical Service, Article III., Notes on the Surgery of the Indian Campaign of 1857 and 1858, and in paragraph 1 of the treatment of gunshot wounds, he mentions:—

"Often, with all his care, in the suppurative stage of a gunshot wound, maggots will infest the sore; and these, in addition to causing great anxiety to the patient, frequently change the character of the wound, and cause great pain and constitutional disturbance. When such a complication occurs, the best treatment is, carefully to pick out the worms with a pair of forceps; to have the wound frequently washed in such a manner, that the water shall enter the wound in a stream, so as to remove as much of the pus and *debris* as possible; and to dress the wound with lint, soaked in turpentine, or in camphor water."

This is a slow and uncertain method of getting rid of these insects, when a little calomel strewed over the part, or blown into the wound from the end of a quill, will immediately rid the patient of them.

In the year 1840, during the Epidemic yellow fever, a corporal of the 82d Regiment, during his attack of fever, had a sac of them in front of the right ear, and every application, such as turpentine, tobacco juice, etc., failed to have any effect upon them. On leaving the hospital at Stoney Hill, I met a very old European woman, who told me that calomel would empty the sac in a few minutes; I returned and tried it, and in less than ten minutes the sac was empty, and had no recurrence of them. In 1848, after the battle of Boom Plaats, over the Orange River, at the Cape of Good Hope, two of the wounded officers, who were shot through the elbow joint—one a captain in the Cape Mounted Rifles, the other a lieutenant in the 91st Regiment—had maggots; the calomel was blown into the wounds, and in less than ten minutes they were all crawling over the bed, and were swept away, and there was no return of them.

I have written this account, as I am not aware that the efficacy of calomel in this affection is generally known.—I am, Sir, your obedient servant,

Thomas Atkinson, M.D.,
Deputy Inspector-General of Hospitals.

VARIETIES.

Appointment.—Dr G. B. H. Macleod has been elected Professor of Surgery in the Andersonian University, Glasgow.

University of Edinburgh.—The number of matriculated students is larger this year than it has been for several years past, the increase being chiefly in the Faculty of Medicine. Up to Monday, the 26th November, the entrances were as follow:—538 medical, 624 literary, and 228 law students; in all, 1390. At the corresponding date of last year the total number of matriculations was 1348.

Royal Medical Society of Edinburgh.—At a meeting of this Society, now in its hundred and twenty-fourth session, held in its hall, Melbourne Place, on Friday evening, the 23d November, the following gentlemen were elected Presidents for the ensuing year:—Mr James Crichton Browne, Dumfries; Mr Alexander Crum Brown, M.A., B. Sc. (Lond.), Edinburgh; Mr William Watson, Montrose; Mr James Pettigrew, Lanarkshire.

A Prolific Philosopher.—A French savant, named Tiraqueau, is said to have given every year a child to his family and a book to the public. He had thirty children, was a native of Poitou, and one of the greatest men of his time.

Toasts.—The formula for drinking healths among the Romans was, "Bene mihi, bene vobis, bene amicæ meæ, bene omnibus nobis, bene ei qui non invidit mihi, et qui nostro gaudio gaudet." Very like a paraphrase of "Our noble selves."

A Resuscitated Murderer.—The following strange story appears in an American paper:—"There is now no use in concealing the fact, that Albert W. Hicks, who was ostensibly executed for piracy on Bedloe's Island on the 12th of last July, is still living, though in a dangerous state, but likely to recover the full use of his faculties and limbs. The sight of his left eye is gone, and his left leg continues paralyzed; but, apart from these injuries, he would appear to have suffered nothing, and his residence at his sister's house in Poughkeepsie has proved every way beneficial. It will be remembered that much comment was excited by the utterly fearless manner in which Hicks conducted himself previous to his execution. He laughed at the idea of the gallows, and was only anxious, as he repeatedly said, to have "things conducted according to agreement." In this agreement it is now believed that a prominent Federal officer had a part; and it is on record in the daily papers, that he was present at the execution, wearing his Deputy Marshal's badge, although no longer in the Marshal's force. It was also remarked at the time, that Hicks was only pulled up a distance of two feet and a half—utterly insufficient to break his neck; and that he was only allowed to remain thirteen minutes hanging. He was then cut down and pronounced dead, after which his body was immediately handed over to the care of Drs J. T. Bell and Henry D. O'Reilly, of Brooklyn. These gentlemen are responsible for his resuscitation; and the electro-chemical bath invented by Professor Vergues was the immediate instrument. The body of the pirate was wrapped in warm blankets, and removed at once to the house of Dr O'Reilly, in Brooklyn, where Drs O'Reilly and Mellery, of this city, were in attendance. The pulse was found to be wholly quiet; but after various experiments, the medical men came to the conclusion that it was only a case of suspended animation. The body was therefore at once placed in the electro-chemical bath; and while subjected to the charges of the battery and the action of the acids, Dr Crane commenced a series of experiments for the inflation of the lungs. In the course of about two hours these were partially successful, the pirate beginning to give faint indications of respiration; and these cheering signs animated the medical men in attendance to redoubled exertions. A cautery was applied to the right foot, and received answer in an immediate contraction of the leg; the same experiment was repeated under the right ear, taking care not to injure the jugular vein; and the head at once commenced rolling, in a manner indicating acute feeling. Very slowly, but steadily, Albert W. Hicks regained consciousness, though for several days unable to speak, his throat being too severely injured. It was then found that his left eye—the side on which the noose had been—had lost all power of sight, and that his left arm and left leg were utterly paralyzed. In this condition he was conveyed to Poughkeepsie, where his sister, Mrs Gavan, lives; and under her roof he is now sheltered, though the friends of the family do not desire to give too much publicity to the fact."—*Express.*

PUBLICATIONS RECEIVED.

A Year-Book of Medicine, Surgery, and their Allied Sciences, for 1859. London, 1860.
American Journal of Insanity—July. Utica, New York, 1860.
American Journal of the Medical Sciences—October. Philadelphia, 1860.
American Medical Monthly — September. New York, 1860.
Archiv für die Holländischen Beiträge zur Natur- und Heilkunde. Part III., Vol. II. Utrecht, 1860.
Baines — The Comparative Properties of Human and Animal Milks. By M. A. Baines. London, 1860.
Bibliothek for Læger, Fjerde Række—April, July, and October 1859; January, April, and July 1860. Copenhagen, 1860.
Boston Medical and Surgical—October 4, 11, 18, and 25. Boston, 1860.
British American Journal—October. Montreal, 1860.
Bulletin Général de Thérapeutique Medicale et Chirurgie—October 15. Paris, 1860.
Canstatt's Jahresbericht der Gesammten Medicin. Vol. III., 1859. Wurzburg, 1860.
Day—Chemistry in its Relation to Physiology and Medicine. By George E. Day, M.A. Cant., M.D., F.R.S. London, 1860.
Dublin Hospital Gazette—October 15 and November 1. Dublin, 1860.
Dublin Medical Press—October 24 and 31; November 7, 14, and 21. Dublin, 1860.
Dublin Quarterly Journal of Medical Science—November. Dublin, 1860.
Gazette des Hôpitaux—October 20, 23, 25, 27, and 30; November 3, 6, 8, 10, 13, 15, 17, 20, and 22. Paris, 1860.

ERRATA IN ARTICLE "DELIRIUM TREMENS," OCTOBER NUMBER.

Page 306, 19th line from top, *for* "central," *read* "cerebral."
Page 307, line 35th from top, *for* "correct," *read* "count."
Page 308, 4th line from bottom, *read* "℥ss." *for* "℥js."
Page 312, 7th line from bottom, *read* "allowed," *instead of* "observed."

The Letter of our Vienna Correspondent will appear in the January Number.

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